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The Business Process Reengineering and Systems Integration Relationship

U.S. Business Integration Program

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SEPTEMBER 1994

The Business Process Reengineering and Systems Integration Relationship

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Abstract

Change resulting from Business Process Reengineering (BPR) activities is generating increased demand for Systems Integration (SI) services. This report is examines the relationship between BPR and SI, and provides an understanding of the influence one activity has on the other.

Major systems integration vendors are now including BPR within their service portfolios. Should SI vendors attempt to compete in the BPR market? How does the growth of BPR impact SI? This report examines the relationship between re-engineering and systems integration from a user's and vendor's point of view.

This report contains 84 pages and 37 exhibits.

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The Business Process Reengineering and Systems Integration Relationship

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Table of Contents

I Introduction I-1

- A. Objectives I-1
- B. Scope and Use I-2
    - 1. Scope I-2
    - 2. Use I-2
- C. Methodology and Demographics I-2
    - 1. Methodology I-2
    - 2. Demographics I-3
- D. Organization I-5
- E. Related INPUT Reports I-6

II Executive Overview II-1

- A. Introduction II-2
- B. Perceptions of BPR II-4
    - 1. Definition of BPR II-4
    - 2. Service Spectrum II-5
    - 3. Impact of BPR on SI II-7
    - 4. Use of Multiple Vendors II-8
    - 5. Leading Vendors II-10
- C. Conclusions and Recommendations II-11
    - 1. BPR Definition II-11
    - 2. High Risk and High Reward in SI II-11
    - 3. Range of Services II-11

III Vendors' Views of BPR and SI III-1

- A. Vendors' Definitions of Business Process Reengineering III-1

B. Range of BPR and SI Services III-4
  1. General III-4
  2. Benefits of a Full Range of Services III-5
C. Impact of BPR on Service Vendors III-6
  1. Change to Service Vendors' Overall Business III-7
  2. Change to Customer Base III-7
  3. Change to SI Projects III-8
  4. Change to Skill Requirements III-10
D. BPR and SI Spending Patterns III-10
  1. BPR and SI Decision Makers III-10
  2. BPR and SI Expenditures III-11
E. Top BPR and SI Vendors III-13
  1. Top BPR Vendors III-13
  2. Top SI Vendors III-15

IV Users' Perspectives on BPR and SI IV-1

A. Users' Definitions of Business Process Reengineering IV-1
B. BPR and SI Interactions IV-4
  1. BPR Generates SI Demand IV-4
  2. BPR Impact on Existing SI Projects IV-4
  3. BPR Changes the Nature of SI Projects IV-6
  4. Users Expect to Use Multiple Vendors IV-8
  5. BPR and SI Selection Responsibilities IV-11
  6. Contract Implications IV-12
C. BPR and SI Expenditures IV-12
  1. BPR Drives SI Expenditure IV-12
  2. BPR Expenditure Compared to SI Expenditure IV-12
D. Top BPR and SI Vendors IV-13
  1. Top BPR Vendors IV-13
  2. Top SI Vendors IV-14
E. BPR Vendor Characteristics IV-15

V Trends and Directions V-1

A. What Is BPR? V-1
B. BPR Impact on SI V-3
  1. Range of Services V-3
  2. Projects V-4
C. Vendor Recommendations V-5
  1. Partnerships V-6

2. Pricing V-8
3. Skills V-8
4. Sales V-9
5. Risk V-9
6. Positioning V-10
E. New Markets V-11
1. BPR Facilitators V-11
2. Methodologies V-11

Appendixes

A. Case Study A-1

B. Definition of Terms B-1
A. Introdution B-1
B. Overall Defintions and Analytical Framework B-3
1. Systems Integration (SI) B-3
2. Professional Services B-5

C. Vendor Questionnaire C-1

D. User Questionnaire D-1

Exhibits

I

-1 Distribution of User Respondents by Industry I-4
-2 Respondent Job Position and Function I-5

II

-1 User Interviewee Job Functions II-3
-2 BPR Definition Gap II-5
-3 Span of BPR Services II-6
-4 Service Spectrum II-7
-5 BPR Impact on SI II-8
-6 Vendor Usage for BPR and SI Projects II-9
-7 Leading BPR Vendors II-10
-8 Leading SI Vendors II-10
-9 Forces Pulling the BPR/SI Vendor II-13

III

-1 Vendors' Comments on the BPR Definition III-2
-2 Consolidated Vendor BPR Position III-3
-3 BPR/Technology Company Relationships III-5
-4 Comparison of SI Project Attributes III-7
-5 Vendor Ratings of Key Risk Factors III-9
-6 Changes to Skills III-10
-7 Needs and Issues That Drive Use of SI III-12
-8 Top Management Concerns III-12

-9 Most Mentioned BPR Vendors III-14

-10 Most Mentioned SI Vendors III-15

IV

-1 Users' Definitions of BPR IV-2

-2 Users' Views Compared to Hammer & Champy's Definition IV-3

-3 Impact of BPR on Existing SI Projects IV-6

-4 Vendor Usage for BPR and SI Projects IV-9

-5 Relationship Between BPR Definition and Vendor Usage IV-10

-6 Responsibility for Selection of BPR and SI Vendors IV-11

-7 Most Mentioned BPR Vendors IV-13

-8 Most Mentioned SI Vendors IV-14

-9 User Requirements of BPR Vendors IV-15

V

-1 BPR Definition Gap V-2

-2 Source of BPR and SI Services V-4

-3 Example of BPR and SI Project Phases V-5

-4 BPR/SI Vendor Relationships V-7

-5 Additional Skill Requirements V-9

Appendixes

B

-1 Information Services Industry Structure - 1994 B-2

-2 Products/Services in Systems Integration B-4

-3 Professional Services Market Structure B-6

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I

Introduction

Over the past three years, information technology users have increasingly identified Business Process Reengineering (BPR) as the process by which they change. Major systems integration (SI) vendors are now including BPR within their service portfolios. Should SI vendors attempt to compete in the BPR market? How does the growth of BPR impact SI? This report examines the relationship between re-engineering and systems integration from a user's and vendor's point of view.

A

Objectives

The purpose of this report is to study the relationship between BPR and SI, and to provide an understanding of the influence one activity has on the other. Specifically, this study identifies user and vendor views on:

- The potential for BPR to generate SI projects
- The need for service vendors to be capable of delivering BPR and SI services
- Vendor and user perception of leading providers of BPR and SI services
- The definition of BPR
- Relative expenditures on BPR compared with SI

B

Scope and Use

1. Scope

The scope of this study is limited to users and BPR and SI vendors in the United States.

2. Use

The report provides analysis and recommendations that will assist vendors to:

- Identify the requirement for vendors to offer a full range of services
- Identify the potential for BPR projects to lead to SI and for SI projects to lead to BPR
- Identify the differences in skill sets between traditional SI projects and SI projects resulting from BPR
- Provide recommendations regarding strategies for service vendors in this market

Users will also benefit as this report will provide them a greater understanding of the interaction between these activities. This will aid in their planning and selection of BPR and SI projects and the appropriate vendors.

C

Methodology and Demographics

1. Methodology

To obtain the user data used in this analysis, interviews were conducted with 56 companies who have completed at least one re-engineering project. Systems integration engagements had been completed at 29 of these companies subsequent to the BPR activities. The remaining firms were surveyed in connection with their work on BPR and Outsourcing. The inclusion of the BPR/Outsourcing users provides an enhanced sample for consideration of the BPR aspects of the research. In addition, 8 in-depth interviews were conducted with major BPR and SI vendors.

The questionnaires used in these user and vendor interviews are included in Appendix C and D.

In some instances the users and vendors were asked similar questions to allow for a comparison of the responses.

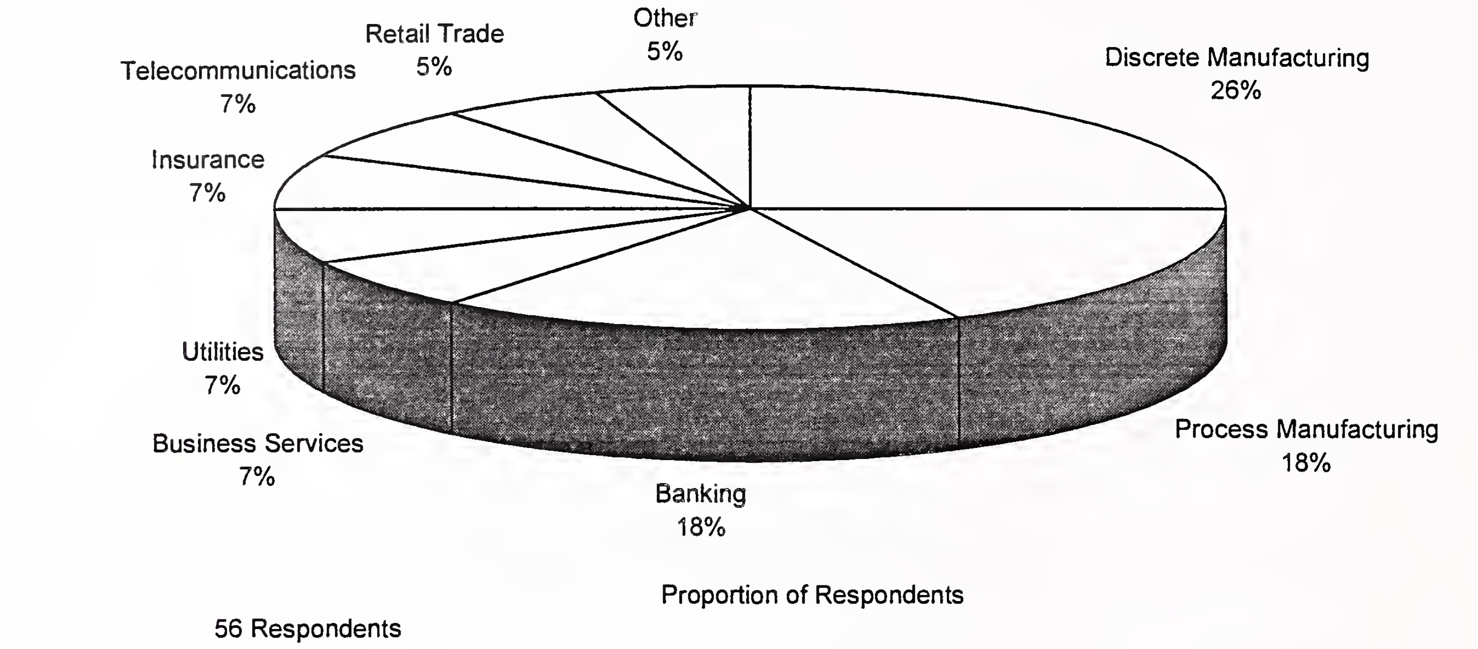
In addition to the information gathered through the interviews, information from INPUT's prior BPR and SI research plus data from secondary sources were used to formulate the conclusions and recommendations presented here.

2. Demographics

The user firms participating in this study were large, in general, and from a variety of industries. Companies in the Banking/Finance sector had a median asset size of $13.0 billion and remaining companies had an average 1993 sales revenue of $9.5 billion. Exhibit I-1 provides a breakdown of the represented industries.

Exhibit I-1

Distribution of User Respondents by Industry

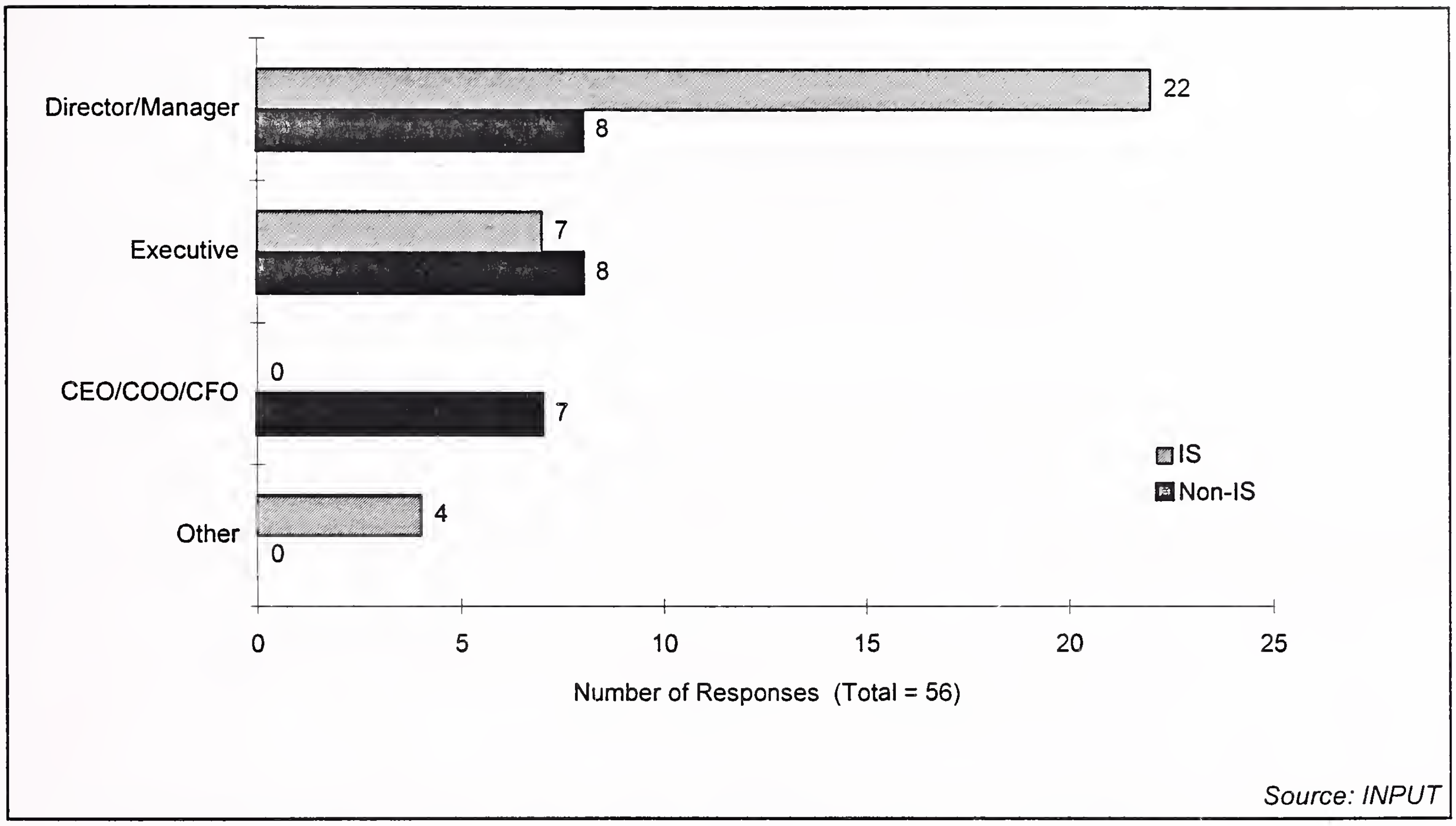


Source: INPUT

The user interviewees were primarily senior and executive managers. In 59% of the surveys the interviews were conducted with members of the information systems organization (see Exhibit I-2).

Exhibit I-2

Respondent Job Position and Function



Source: INPUT

D
Organization

The remainder of this report is organized into five chapters:

- Chapter II, *Executive Overview* - provides a synopsis of the findings of this study along with recommendations.
- Chapter III, *Vendors' Views of BPR and SI* - presents INPUT's analysis of how vendors define BPR, the range of BPR and SI services they offer, the impact of BPR on service vendors, the relationship between BPR and SI expenditures and their views on their competitors.
- Chapter IV, *Users' Perspectives on BPR and SI* - examines the same issues as Chapter III, but from the users' perspectives and identifies differences in opinion between users and vendors regarding BPR and SI services.
- Chapter V, *Trends and Directions* - discusses the variation in perspectives between users and vendors and the impact on the

BPR and SI markets in the future. This chapter concludes with recommendations for both user and vendor organizations.

- Appendix A, *Case Study* - provides an in-depth description of an organization that has completed a major BPR project and the subsequent SI activities.
- Appendix B, *Definitions* - provides definitions of key terms used throughout this report. A complete set of INPUT industry definitions may be obtained by contacting any INPUT office.
- Appendix C contains the vendor questionnaire and Appendix D contains the user questionnaire used for this study.

E

Related INPUT Reports

Systems Integration Opportunities in Re-engineering, (1993)

Impact of BPR on Outsourcing, (1994)

Business Process Reengineering in the Federal Government, (1994)

Contractual Approaches to Project Risk Reduction, (1994)

US Systems Integration Market Forecast, 1993-1998, (1994)

II

Executive Overview

As more and more users look to Business Process Reengineering (BPR) as the key technique for identifying the requirements for change within their organizations, there is an increasing demand for new services. These re-engineering services demand new capabilities from vendors. Few users expect to satisfy the demand for re-engineering skills from their internal pool of resources, so they must look to outside vendors for assistance. Some users view their traditional Systems Integration (SI) vendors as capable of delivering BPR - other users do not and are looking to new sources of skills as the project requirements change.

Over the past 5 years there has been a surge of vendors offering BPR services. For some vendors, BPR is the re-naming of a service they have always delivered; for others it is a new market. No longer are vendors focused on just technological enhancement and as such the majority of SI vendors now proclaim their offering of BPR services.

For the SI vendor, the introduction of BPR services is no guarantee of success. BPR and related SI services are part of a new market that is relatively unknown to many vendors. This is also a new area for many of the users who seek to purchase these services. This report assists both vendors and users to understand this market by identifying and explaining the relationship between the service areas.

The objective of this study is to identify:

- User and vendor definitions of BPR
- Characteristics of potential SI projects generated by BPR

- The advantages and disadvantages to service vendors of developing and maintaining the capability to deliver BPR and SI services
- Vendor and user perception of leading providers of BPR and SI services
- Recommended strategies for vendors wanting to enter the re-engineering market.

A

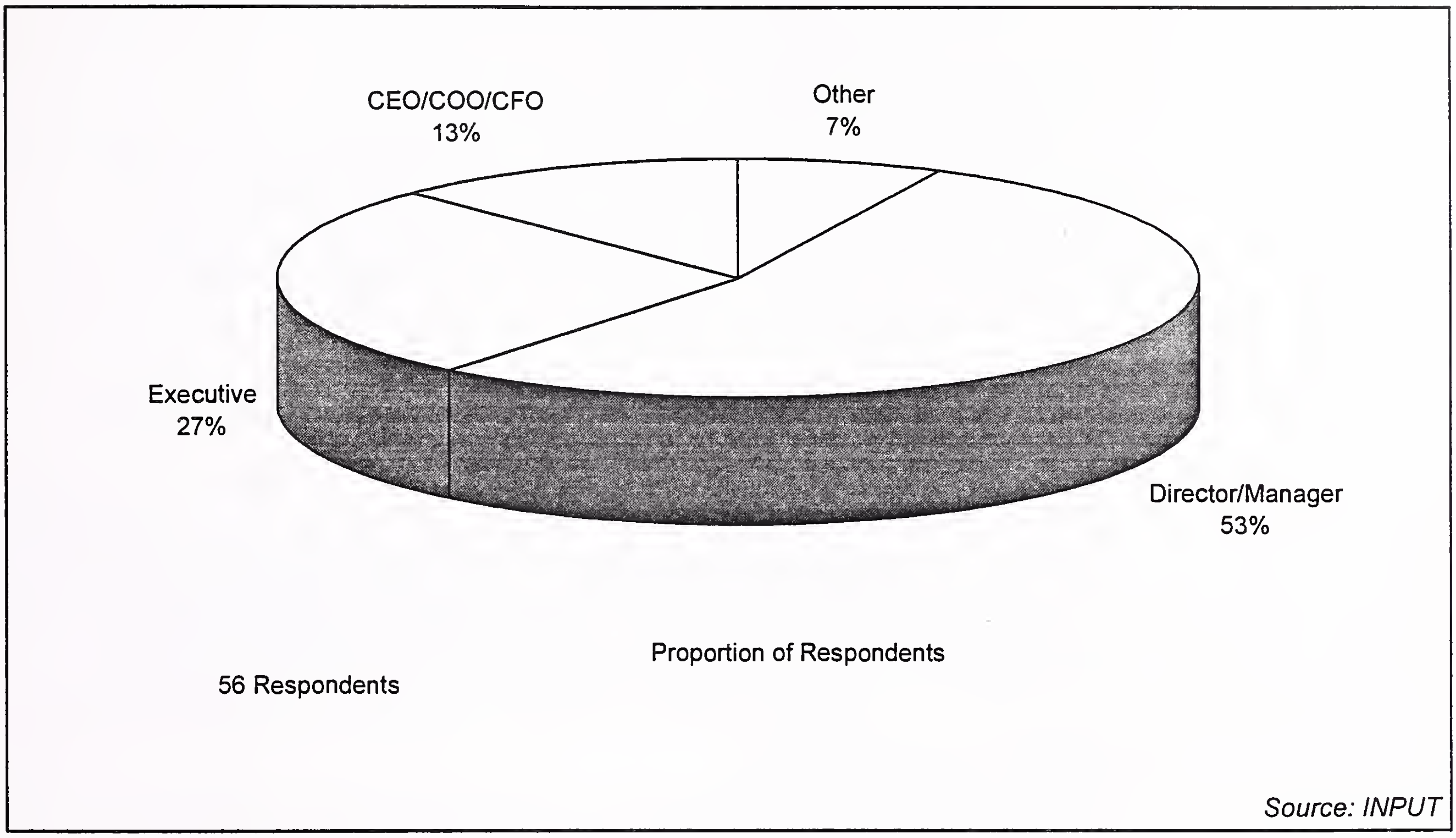
Introduction

To obtain the data used in this analysis, INPUT conducted interviews with 8 vendors and 56 users who have completed at least one re-engineering study. All of the vendors and 29 of the user companies had completed subsequent systems integration projects.

The user interviewees included a high percentage (40%) of senior and executive managers as illustrated in Exhibit II-1.

Exhibit II-1

User Interviewee Job Functions



Source: INPUT

Topics on which the users and vendors were asked to comment include:

- Their definition of BPR
- The impact of BPR on demand for, and content of, SI activities
- Their perception of leading vendors of BPR and SI
- Relative expenditure on BPR compared to SI
- Selection criteria for choosing BPR vendors
- The range of services they offer

B

Perceptions of BPR

1. Definition of BPR

The phrase “Business Process Reengineering” is over-used. It has in many cases superseded “Rightsizing” as a euphemism for cost cutting while cost reduction is internally focused, BPR requires users to look outside their organization and to review how best they can provide value to their customers.

Most people define BPR in terms of what the process does. In each case the definition falls into one of four categories:

- **Strategic Consulting**
  This is an externally focused process that identifies the markets in which a company should compete and the requirements of participating in these markets. Strategic Consulting answers the question - *Why should the company compete in this market?”*

- **Core Process Design**
  This examines and refines the four to five processes that are critical to the success of the organization - e.g. order-to-cash. The processes under consideration are company-wide and cross departmental and divisional boundaries. The question to be answered by Core Process Design is - *“What must the company do to succeed in the market?”*

- **Functional Process Improvement**
  This enhances the way in which a localized application (e.g. invoicing) operates. This is a smaller scale activity than Core Process Design which considers the complete organization and the interaction of multiple functional processes. Functional Process Improvement considers - *“How must a function operate in order that the company will succeed in the market?”*

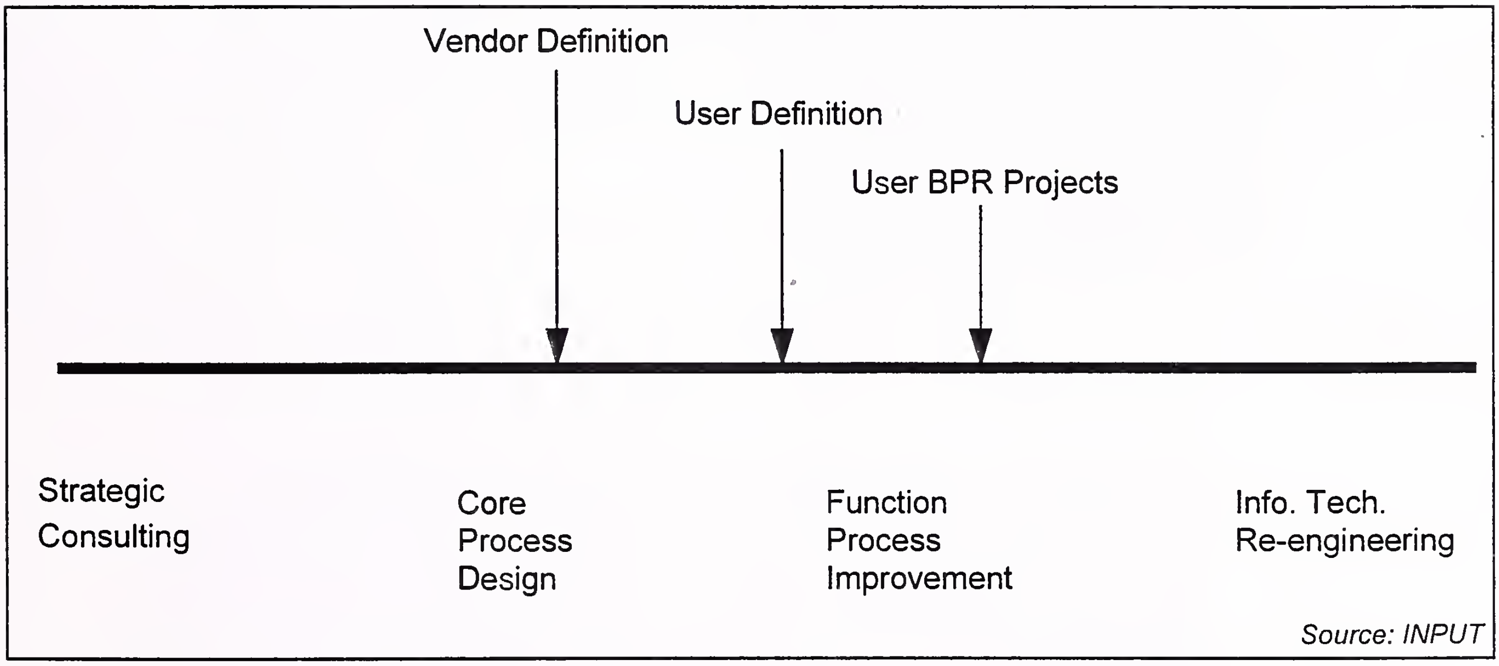
- **Information Technology Re-engineering**
  This is the traditional domain of the SI vendor. It is the planning and implementation of the technology required to support the corporate operation. Information Technology Re-engineering considers - *“How should technology be used to support the organization?”*

Using these four categories, it is possible to illustrate the consolidated position of each group's definition. This exercise identifies that a gap exists between user's and vendor's perception of what defines BPR. There is an additional difference between how they each define it and the service delivered under the banner of BPR.

Vendors perceive BPR along similar lines to those expressed in Hammer & Champy's definition. However, the users' perception is more technically focused and their view of changes implemented under the banner of BPR is yet further towards the technical re-engineering end of the scale. Exhibit II-2 illustrates this diversity of opinion.

Exhibit II-2

BPR Definition Gap



Source: INPUT

As users gain knowledge and experience with re-engineering then INPUT believes the users' definition of BPR will change. Users will expect BPR to include examination and enhancement of core processes as well as improving functional processes and driving the enhanced use of information technology.

2. Service Spectrum

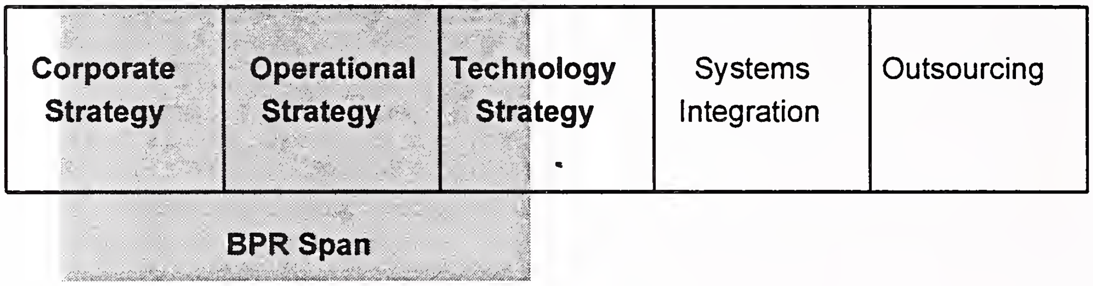
The marketing of services, by vendors, has a different focus from the four areas described above. When services are positioned by vendors then they are usually viewed in terms of:

- Corporate Strategy
- Operating Strategy
- Technology Strategy
- Systems Integration
- Outsourcing

This may be thought of as a service value-chain with Corporate Strategy at the high-end and Outsourcing at the low-end. The range of those services that fall within the realm of BPR is:

Exhibit II-3

Span of BPR Services



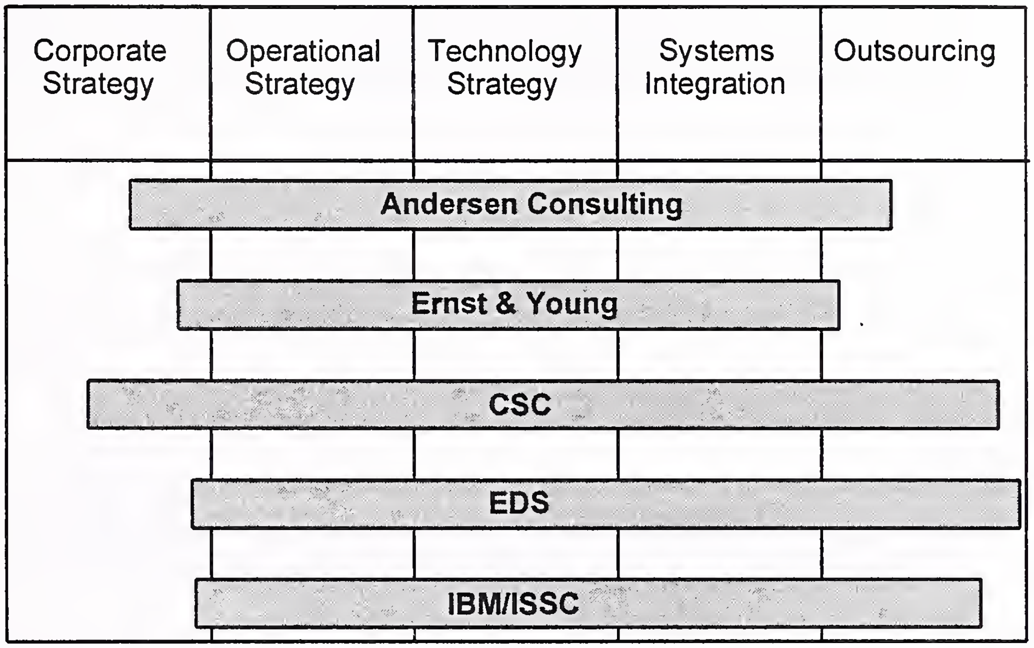
Source: INPUT

Vendors who have traditionally offered strategic business consulting services claim that BPR is just a modern name for a portion of the work they have performed for years. These claims may well be justified. However, some companies who have only delivered implementation services as an adjunct to their products sales are now claiming these same services are BPR. This is causing confusion.

A service map can be drawn showing INPUT's opinion of the range of services offered by some leading vendors:

Exhibit II-4

Service Spectrum



Source: INPUT

3. Impact of BPR on SI

INPUT's research identifies four areas in which BPR affects SI. Each of these is noted in Exhibit II-5, followed by an example of the resulting changes.

Exhibit II-5

BPR Impact on SI

Area of Change Due to BPR	Examples of Change
Generation of new SI projects	- 1:4 expenditure ratio between BPR and SI
Change to the profile of SI projects	- Wider scope - Increased complexity - Increased payback
Delay to ongoing SI activities	- Scrapped - Re-architect
Demand for new consultant skills	- Increased range of technical knowledge - Knowledge of rapid deployment techniques - Executive-level communication skills - Enhanced project management skills

Source: INPUT

Traditionally, SI activities are specified in terms of application functionality. However, SI projects driven by BPR efforts emphasize business results and have a less precise functional specification but an increased scope of operation due the crossing of functional boundaries.

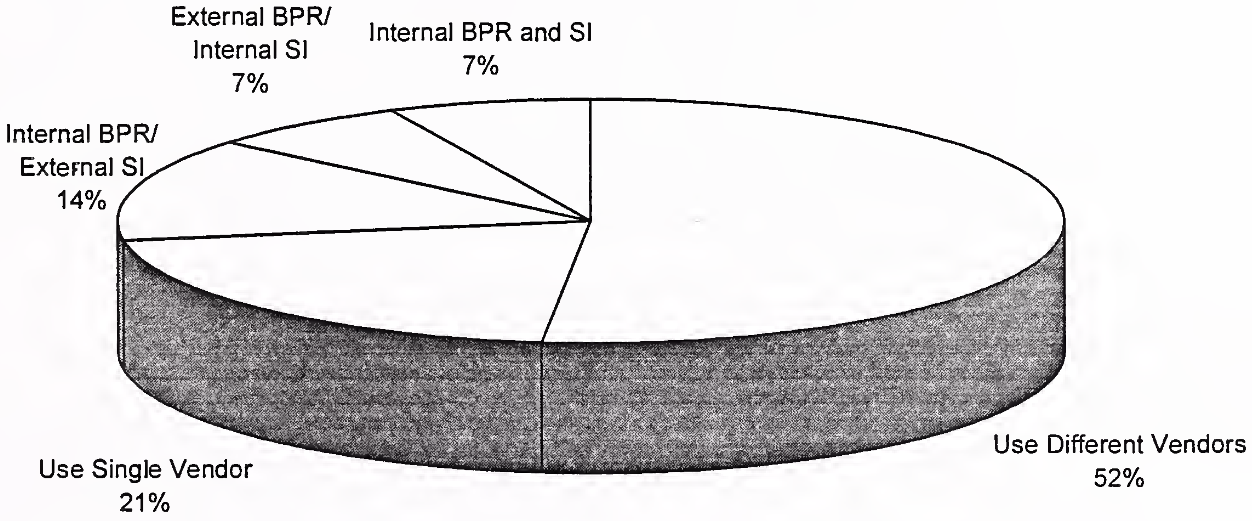
Examination of the changes in skill requirements between projects generated by BPR and traditional SI projects shows that the initial BPR activity necessitates an increase for both technology-based skills and for people-based skills in subsequent SI work. The required depth of knowledge exposes the trade-off that must take place between specialization of skills and number of staff employed by the vendors.

4. Use of Multiple Vendors

Understanding of the potential demand for a single vendor to supply BPR as well as SI services is essential if a vendor is to offer the optimum portfolio of service. Although vendors perceive a wide range of services as a competitive advantage, users do not currently share this view. When the users were asked if they expected to use the same vendor for BPR as well as subsequent SI projects their responses were:

Exhibit II-6

Vendor Usage for BPR and SI Projects



Proportion of Respondents

29 Respondents

Source: INPUT

This chart indicates that 72% of users use are prepared to use external vendors instead of internal staff. Similarly, 85% buy SI services and 79% purchase the necessary BPR services. Only 7% of the surveyed users choose to rely on internal skills for BPR and related SI activities.

INPUT believes that a major contributor to the selection of different vendors for BPR than SI was that 40% of the users did not expect the BPR activity to result in SI. Therefore, there was no initial incentive for the users to ensure that the vendor was capable of delivering each of the services. The percentage of users using the same vendor for both services will increase as the connection between re-engineering and subsequent integration activities become an anticipated norm.

5. Leading Vendors

Based on the number of times vendors were mentioned, users do not include any of the major hardware manufacturers among their list of top BPR vendors. Only one of the manufacturers (IBM) is mentioned by the users as a leading SI vendor. This highlights a major issue, of misunderstanding user perception, for those traditional, technology-driven companies who are attempting to position themselves within the services market.

Exhibits II-7 and II-8 show the vendors who were most often mentioned by users as leading BPR and SI vendors, and by vendors as their leading competitors.

Exhibit II-7

Leading BPR Vendors

User Ranking	Vendor Ranking
1. Andersen Consulting	1. Andersen Consulting
2. Computer Sciences Corp. (CSC)	2. Ernst & Young
3. Price Waterhouse	3. CSC

Source: INPUT

The traditional management consultants (e.g. McKinsey, Bain & Co.) were mentioned but to a lesser extent. This is, however, in line with the users' view of BPR being a tactical rather than strategic change process.

Exhibit II-8

Leading SI Vendors

User Ranking	Vendor Ranking
1. Andersen Consulting	1. Andersen Consulting
2. Computer Sciences Corp. (CSC)	2.EDS
3. IBM/ISSC	3. IBM/ISSC
4. Electronic Data Systems (EDS)	4. SHL Systemhouse

Source: INPUT

C

Conclusions and Recommendations

1. BPR Definition

It is in the interests of users and of vendors to clearly define BPR and to differentiate between technology-based services and business-based services.

The vendors need to position themselves in terms of service delivery, instead of the current view (see Exhibit II-3) that concentrates on the area of change. This refinement of the marketing message will assist a convergence of the various BPR definitions, thus avoiding confusion between user and vendor. In addition, it will be easier for the users to appreciate the range of services available from different vendors.

2. High Risk/High Reward in SI

SI projects generated by BPR can offer high reward due to the increased payback to the user from successful implementation. However, there is also high degree of risk in these contracts.

Common characteristics of BPR-related SI include:

- Complex Technology
- Lack of precise specification
- Evolving requirements
- Close user involvement

Each of these characteristics contributes a high risk factor to the projects, as discussed in the next chapter. Therefore, agreement and coordination between vendor and user on control and management of the projects are particularly important in this type of activity.

3. Range of Services

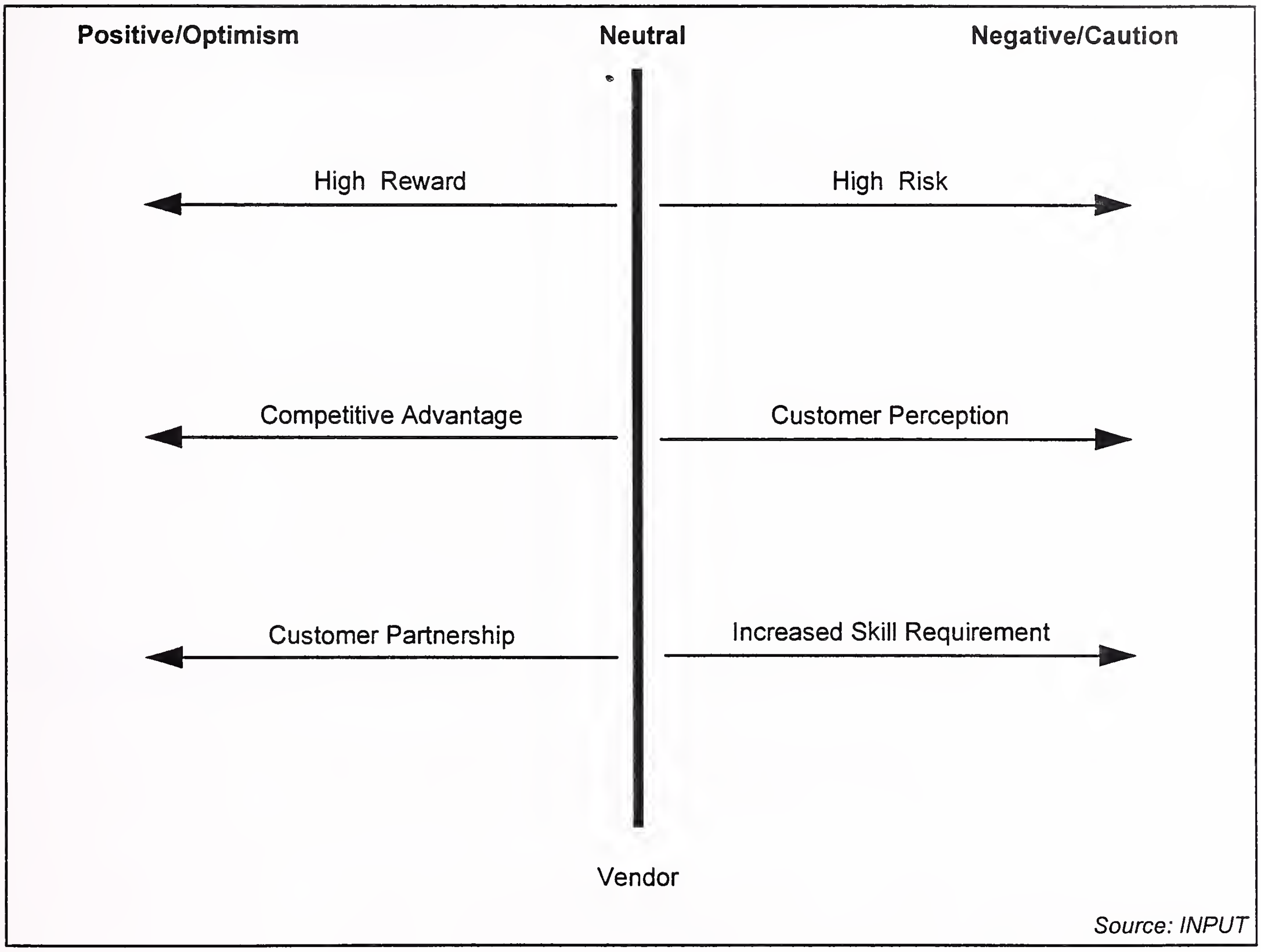
The BPR and related SI markets will see a polarization of vendors over the next 3-5 years. This will be due to vendors becoming either full-service vendors or niche market suppliers (e.g. training companies). Vendors will become more focused in their positioning and approach to the market.

However, this does not mean that full service vendors must be capable of delivering all of the services themselves, since partnering will increase and become more structured. Not only will SI vendors seek out and partner with the BPR specialists, but also the strategic management companies will become more willing to form alliances with SI companies. This movement will also benefit the niche market service vendors as they will form partnerships with vendors of complementary services.

The advantages and disadvantages of attempting to deliver services in the BPR and related SI markets are opposing forces pulling on the vendor. Exhibit II-9 illustrates some of these forces.

Exhibit II-9

Forces Pulling the BPR/SI Vendor



Source: INPUT

This diagram also identifies the need for vendors to consider multiple aspects of the impact of moving into the BPR market. For example, it is not sufficient to concentrate on risk management and to ignore customer perception and development of an enhanced skill set.

However, for the vendor who successfully overcomes these issues, the market for BPR and associated SI holds rich rewards. The benefits are not only short term monetary gain but elements such as close, long term customer partnership as well as a solid foundation for expansion of the customer base.

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III

Vendors' Views of BPR and SI

The SI vendor community is looking at the potential for technology business growth requiring their entry into management consulting in general and the BPR market in particular. They are also looking to protect their customer base from competitors providing services higher up the service value chain. This chapter examines vendor perceptions of the relationship between BPR and SI.

A

Vendors' Definitions of Business Process Reengineering

The starting point for most vendors' definitions of BPR is that used by Hammer and Champy in their book *Reengineering the Corporation*:

> "Business process reengineering is the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance, such as cost, quality, service, and speed."

However, there is a variation among vendors with regard to their interpretation of this definition and their subsequent delivery of BPR-related services. Consideration of some comments received from vendors when they were questioned about their definition of BPR illustrates some of the differences in the vendor perspectives:

Exhibit III-1

Vendors' Comments on the BPR Definition

- Hammer & Champy's definition is too process focused.
- BPR must show a requirement for change management.
- BPR is the fundamental rethinking and radical redesign of an enterprise's business from a customer's perspective.
- BPR must include technology.
- BPR is at one end of a continuum such as:

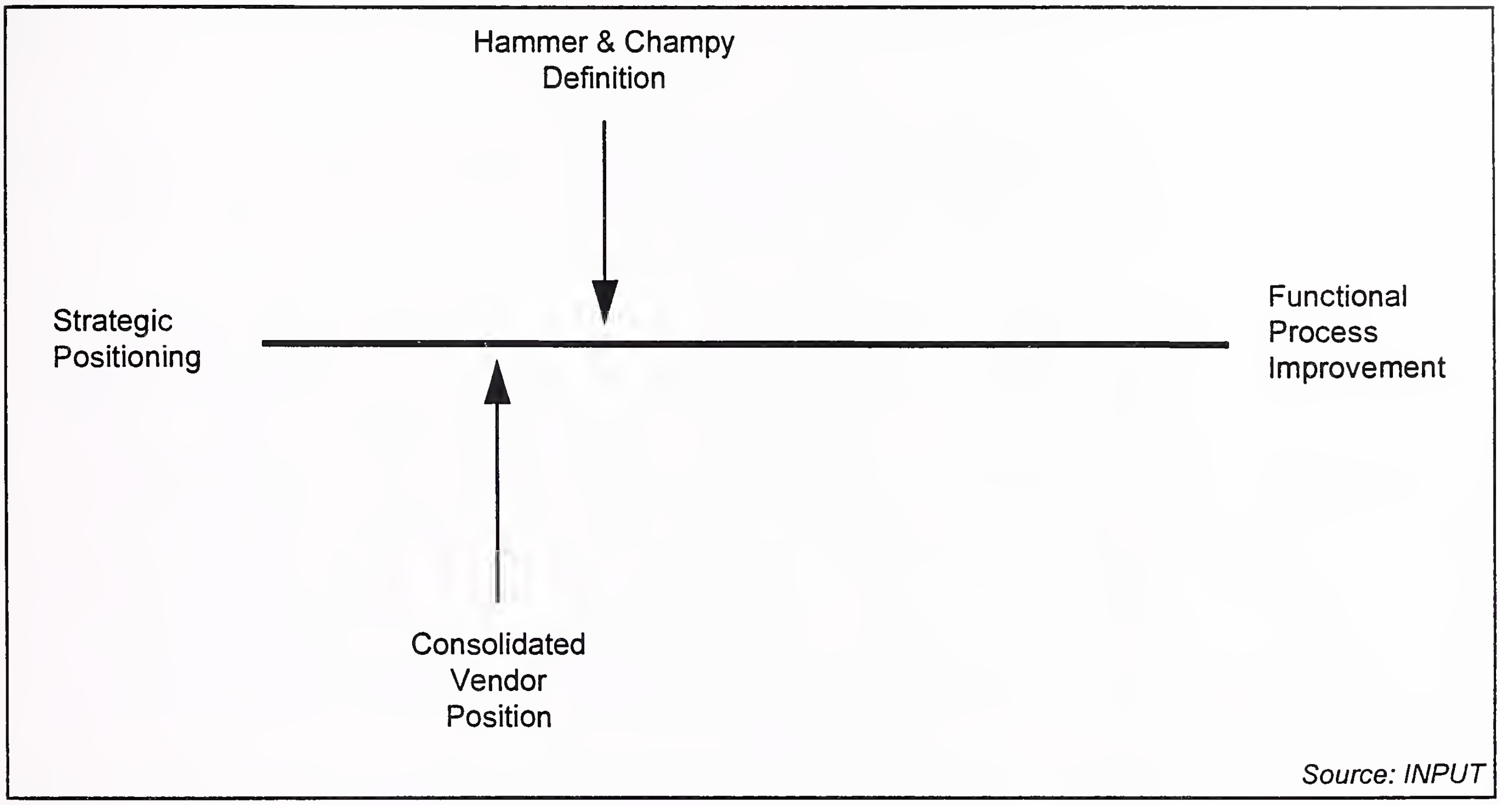
BPR → Functional Process Redesign → Continual Improvement

Source: INPUT

It is possible to estimate a consolidated positioning of the vendors' BPR perspective in relation to Hammer & Champy. By taking account of the definitions provided by vendors in the survey plus their subsequent comments on the activities performed as part of a BPR project this position can be plotted. Exhibit III-2 represents INPUT's assessment of this position on a spectrum. The spectrum ranges from Strategic Business Positioning at one extreme, to Functional Process Improvement Via Technology at the other extreme.

Exhibit III-2

Consolidated Vendor BPR Position


Hammer & Champy Definition
Strategic Positioning
Functional Process Improvement
Consolidated Vendor Position

Source: INPUT

Most BPR vendors believe their BPR offering should extend beyond the standard definition and include examination of the strategic business objectives of the user. But in practice, these vendors are more likely to deliver, or be asked to deliver, a service that focuses on technological change. If most of their projects are to deliver technological change then the implications are that:

- vendors may spend time and effort maintaining and/or marketing levels of skills that are not required by the prospects
- vendors wanting to enter the BPR market may be dissuaded by a perceived barrier, a service level requirement that does not really exist

B
Range of BPR and SI Services

1. General

Most large vendors offer a full range of services yet few try, or are able, to deliver all the services themselves due to their choice of market positioning or skill shortage

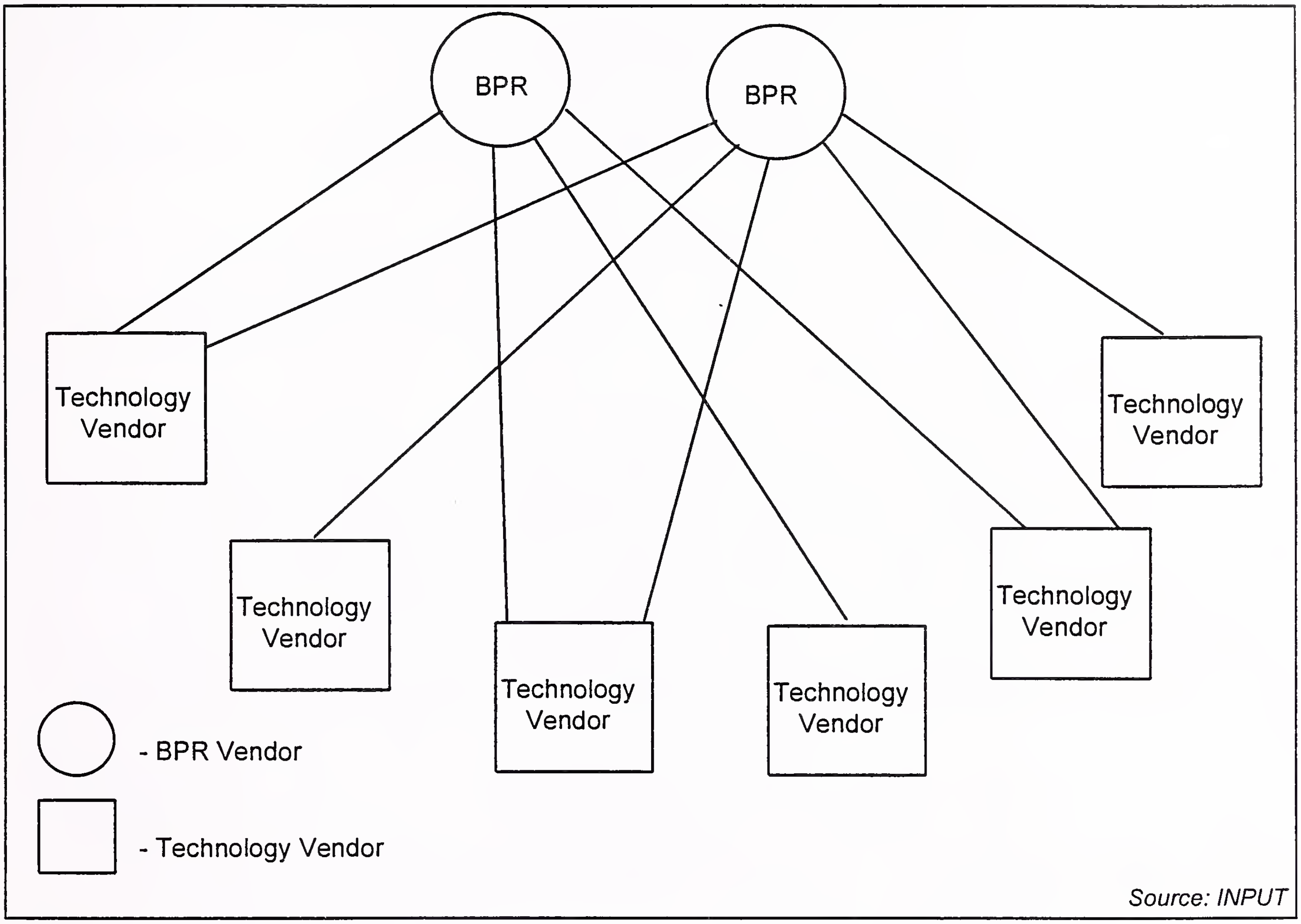
Some vendors form alliances to augment the range of services that can be offered. These arrangements may be on a temporary (for the duration of an individual project) or on a permanent basis. One of the companies surveyed has an alliance partner deliver 6 of the 11 services in its portfolio. This alliance arrangement allows each company to deliver the services in which they are most experienced while maintaining an image of being a full service vendor. Those vendors who have previously focused more on technology delivery and implementation than on business consultancy make most use of this type of arrangement.

However, even the vendors known for their full range of services, including business consultancy, form partnerships with other vendors to obtain expertise in specific industries, processes or technical functionality. These partnerships are usually created for individual projects and are a form of professional service contracting between the prime vendor and a specialist sub-contractor. Examples of technologies for which external assistance has been sought include documentation workflow management and on-line transaction processing.

Technology-focused vendors form only a limited number of alliances (one or two) to help them deliver business and strategic consultancy services. However, vendors with high level of proficiency in business and strategic consultancy usually have a wide range of technology-based companies with whom they partner on a project-by-project basis. Exhibit III-3 illustrates this one-to-many relationship on the part of the BPR specialist and the many-to-one relationships for the technology vendor.

Exhibit III-3

BPR/Technology Company Relationships



Source: INPUT

Technology service vendors gave examples of some of the partners they use for strategic business consulting and the companies identified included:

- McKinsey & Co.
- CSC Index
- Mercer
- Boston Consulting Group

2. Benefits of a Full Range of Services

Vendors perceive there to be 3 key benefits from offering a full range of services:

1. The vendor can satisfy any service request from their customers
2. The vendor has a competitive advantage over those vendors who supply only some of the services
3. Issues relating to the handover from one vendor to another are minimized

The first of these benefits is based on the assumption that a vendor's customers will ask them to provide all the services. However, this assumption is not necessarily valid and is discussed in the next chapter.

Confusion, disagreement and increased cost may occur when different vendors are used for each service or phase of an overall project. The primary reason is that each vendor develops their own expertise and understanding of the requirements for their portion of the work. These views may not be the same as those of the vendor supplying the preceding phase, one vendor may even disagree with the outcome or recommendations of another vendor. This results in additional cost being incurred by the user while the new vendor becomes familiar with, and makes necessary adjustments to, work completed by the prior vendor. Management and control of the handover process is a critical area even on those occasions when a single vendor is supplying all the services but delivery is spread across various groups within the vendor organization.

The offering of a broad range of services has disadvantages as well as advantages. The primary disadvantage of offering such a full range of services is that a corresponding full range of skills and additional staffing may be required. This is the driving force behind the partnerships and alliances formed among service providers.

C

Impact of BPR on Service Vendors

Within this section of the report the impact of BPR on SI vendors is considered from four points of view:

1. Their overall business
2. The change to their customer base

3. The change to SI projects

4. The change to the skill requirements

1. The Change to Service Vendors' Overall Business

BPR is generating growth in the SI business. In many cases, SI is seen as a natural follow-on to BPR, the activities are viewed as so integrated that BPR cannot be successful without the completion of a subsequent SI project.

Research reveals that in the user organizations the extent of technological change demanded by BPR often results in the delivery of SI services being contracted to an external vendor. This is because IS departments lack the ability, and sometimes the confidence, to make the required changes themselves.

The inclusion of BPR into a portfolio of service offerings has a dramatic impact on the type of work in which the vendor may be asked to participate. The following table (Exhibit III-4) identifies some of the areas in which these changes manifest themselves:

Exhibit III-4

Comparison of SI Project Characteristics

SI Projects Generated by BPR	Traditional SI Projects
Major Change	Incremental Change
Cross Function	Single Function
Executive-level attention	Departmental Project
Core Process Related	Functional Process Focus

Source: INPUT

2. The Change to Customer Base

Some traditional SI vendors have found that the introduction of a BPR service increases the size of the customer base by providing entry into new accounts as well as enhancing the base within existing customer organizations. This is due to the SI vendors developing new relationships within the user organizations at a higher level.

In addition, the SI vendors are marketing themselves differently, with a greater emphasis on business issues and change and a reduced highlighting of technology. This marketing change is designed to position the vendor differently in the minds of the users. User who would previously not have considered a particular SI vendor might now do so.

3. Change to SI Projects

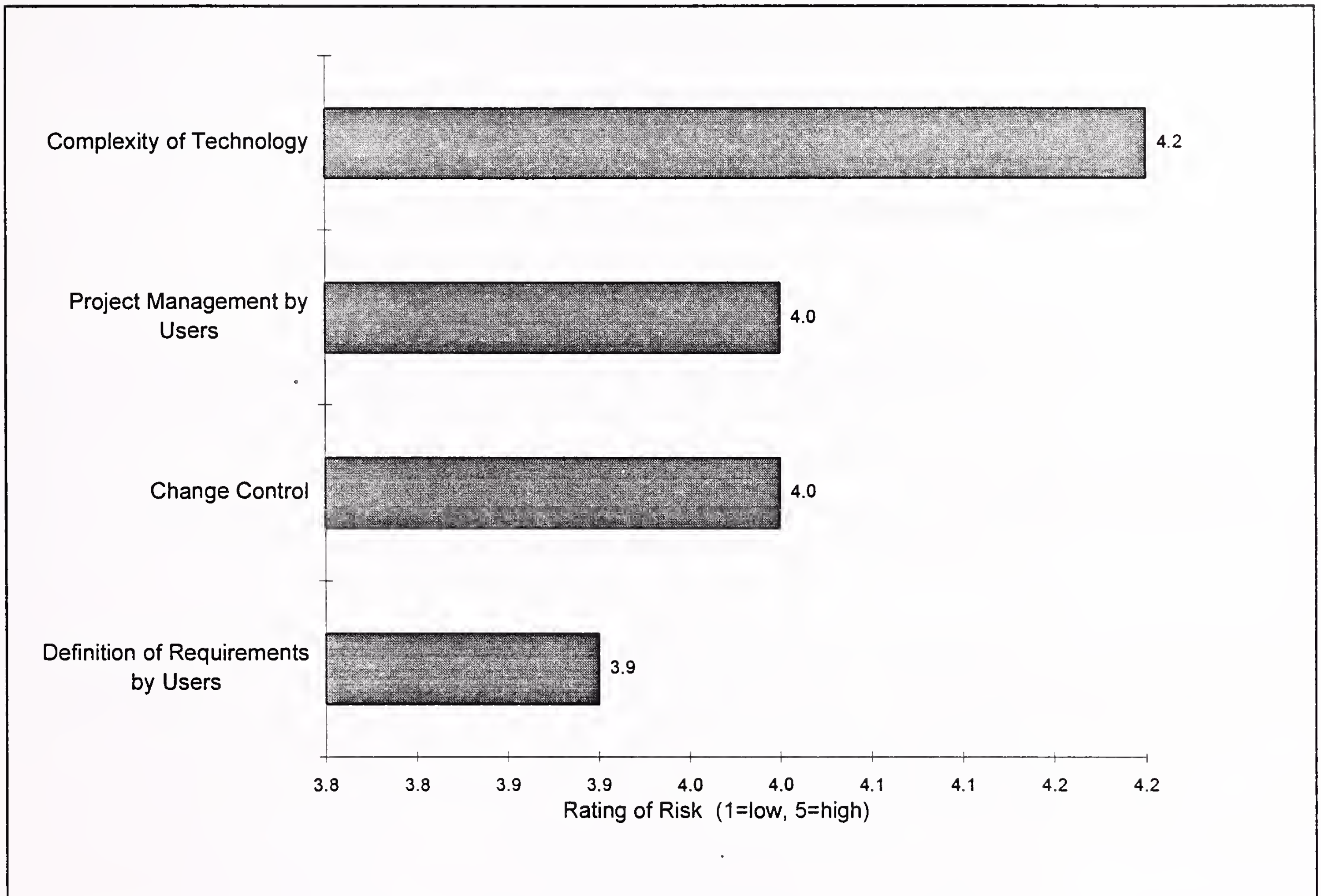
All of the surveyed vendors identified differences in SI work that followed BPR activities compared with other SI projects in which they had participated. Characteristics of this BPR-generated SI work include:

- More complex activities
- Less rigidly defined specification
- Increased use of value-based pricing models
- Higher fees and profitability

The complexity of activities plus the openness of the specifications make these high risk SI projects. Exhibit III-5 illustrates those factors rated by vendors as being key sources of project risk. This exhibit is based on primary research performed for the "*Contractual Approaches to Project Risk Reduction*" report and shows the 4 factors vendors rated as having greatest importance out of the 10 identified areas.

Exhibit III-5

Vendor Ratings of Key Risk Factors



Source: INPUT

Traditionally, SI activities are specified in terms of application functionality. However, SI projects driven by BPR efforts emphasize business results and have a less precise functional specification Measured on this basis the specification of the SI is less rigid or more “open”. With this openness comes uncertainty for the vendor because the scope of SI work is relatively unknown and there is an increased potential for requests for change.

Fixed-price contracts are less attractive for the vendors because of this uncertainty yet this method of pricing remains the buyer’s preferred method of doing business. However, as SI vendors become more willing to link some portion of their profit margin to the saving or improved profits resulting from BPR-related work then the incidence of value-based pricing will increase.

4. Change to Skill Requirements

Examination of the changes in skill requirements between projects generated by BPR and traditional SI projects shows that the initial BPR activity necessitates an increase for both technology-based skills and for people-based skills in subsequent SI work. Exhibit III-6 shows various skill areas mentioned by vendors as being changed by BPR.

Exhibit III-6

Changes to Skills

Technology-Based Skills	People-Based Skills
Wide range of technical knowledge	Depth of experience
Design of complex systems	Executive-level communication ability
Rapid development techniques	Enhanced project management
Rapid deployment techniques	Capable of creative thought

Source: INPUT

In all cases, the vendors reported that they had experienced a change in the skills required of their services staff. However, an SI vendor moving into the BPR field may only consider the skills relating to changes in technology. These vendors may not recognize the requirement for ensuring the mix of staff must also include people with skills highlighted under the People-Skill heading.

D

BPR and SI Spending Patterns

When considering the expenditures on BPR and SI it is necessary to also appreciate the positions, in the user organization, of the people who own the BPR and SI budgets.

1. BPR and SI Decision Makers

All the vendors who responded on this topic mentioned that the level of decision maker was higher for BPR than for SI projects. Decisions regarding SI work are usually made within the user's IT organization. However, decisions on BPR activities are made at senior executive level, often at CEO levels.

One vendor described these decisions as being "smarter" and "more sophisticated". This is due to the far reaching impact of BPR requiring careful consideration of the potential vendor to ensure the vendor is capable of working with the user organization and achieving the desired results.

Another reason for the decisions being “more sophisticated” is that options are no longer based on just technical criteria but also on business criteria. In some cases the CIOs no longer want, or are unable, to be the decision maker as they do not have the prerequisite strategic business awareness.

The vendor sales force has to understand and consider this change when they are identifying the users with whom to build relationships.

These changes to the decisions and the decision makers illustrate the requirement for BPR consultants and sales people to have a strong ability for executive-level communication.

2. BPR and SI Expenditures

Vendors estimates of the ratio between BPR and SI expenditure vary from 1:2 to 1:10 with an average of about 1:4. This indicates the importance of BPR as a driver of the SI market. Research during 1993 for the *“Systems Integration Market, 1993-1998”* report affirmed this view. In this report the user needs and issues driving SI were identified as the following:

Exhibit III-7

Needs and Issues That Drive Use of SI

Needs Reported	Importance Rating *
Solutions involving complex industry processes	4.1
High level of required connectivity	4.0
Need to steer client/server plans	4.0
Use of key new technology	3.8
Restructuring or re-engineering	3.7
Use of vendor skills to solve application problems	3.5

*1 = low, 5 = high

Source: INPUT

Reengineering (BPR) is only ranked fifth on the list of needs and issues driving SI. However, all of the needs and issues with a higher ranking are requirements typically identified by a BPR process. It is anticipated that the next INPUT 5-year forecast report for SI (to be contained in "*Business Integration Market, 1994-1999*") will show BPR with a higher rating of importance than for 1993. Early 1994 research on top management concerns supports this as shown in Exhibit III-8.

Exhibit III-8

Top Management Concerns

1. Re-engineering Business Processes
2. Aligning IS and Corporate Goals
3. Organizing and Utilizing Data
4. Instituting Cross-functional Information Systems
5. Creating an Information Architecture

Source: Computer Sciences Corporation

Examination of BPR and SI expenditures must also consider the process of choosing projects on which to spend money. The potential for rapid return on investment in BPR and associated SI activities is now a determinant of the sequence in which projects will be implemented. The typical period within which payback is expected is 6-12 months.

This demand for speed of payback results in BPR and SI being phased so that elements with high and fast return are completed prior to potentially less productive activities commencing. In some cases, these increased profits or reduced costs are used to fund subsequent BPR and SI projects. BPR and SI vendors should ensure that they identify the anticipated impact of each phase of their overall projects so that potential customers understand the relevant timescale and magnitude of payback.

E

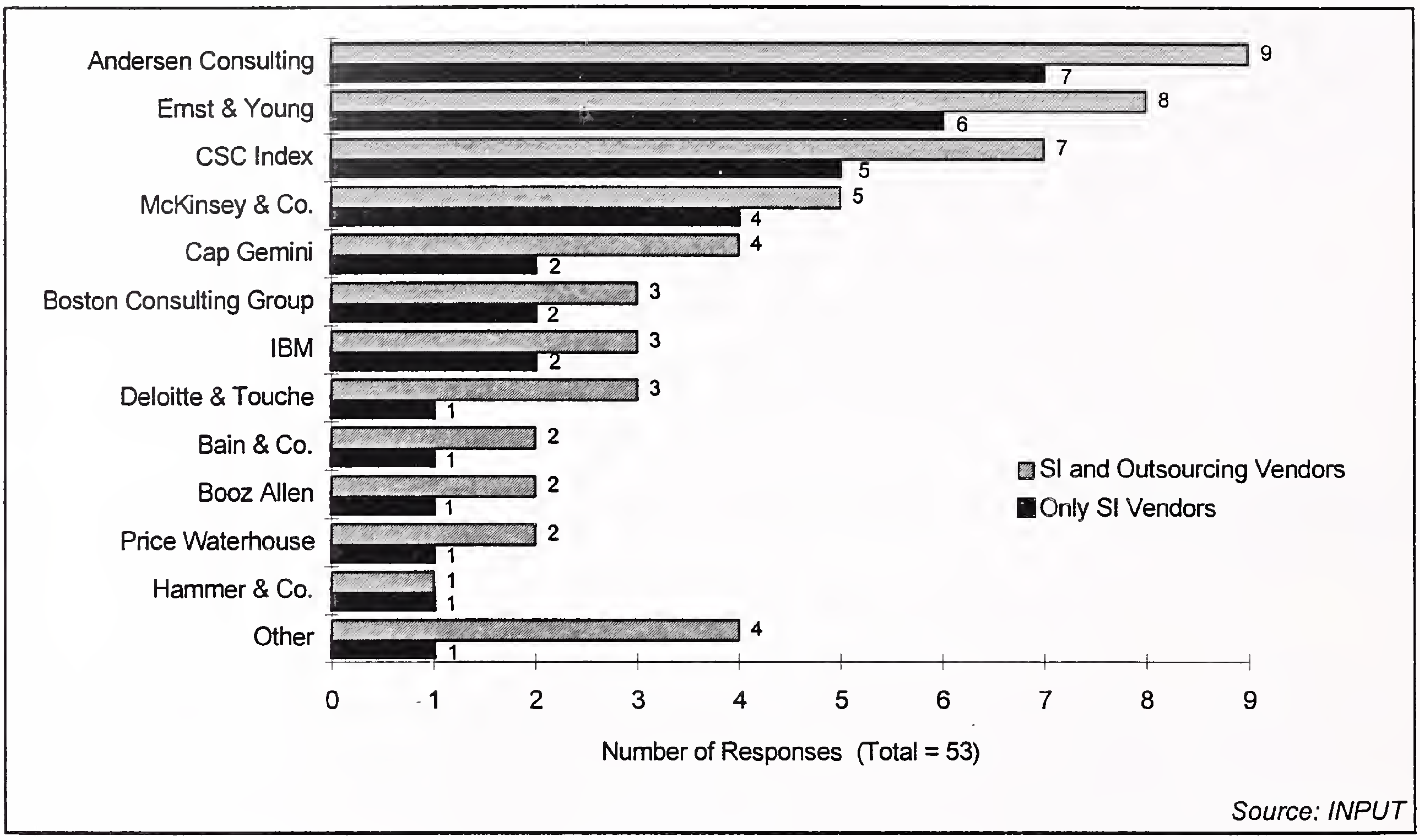
Top BPR and SI Vendors

1. Top BPR Vendors

Each of the vendors was asked to identify those companies they considered to be their top competitors in the supply of BPR services. Based on the responses received, the following chart (Exhibit III-9) identifies those BPR vendors who were mentioned by at least two vendors:

Exhibit III-9

Most Mentioned BPR Vendors



Source: INPUT

This analysis shows the responses received from companies surveyed for this report and those surveyed for the associated report *The Impact of BPR on Outsourcing*. Each of the BPR vendors receiving at least 2 mentions were also identified in the restricted, smaller sample, which excluded companies surveyed only for the Outsourcing report.

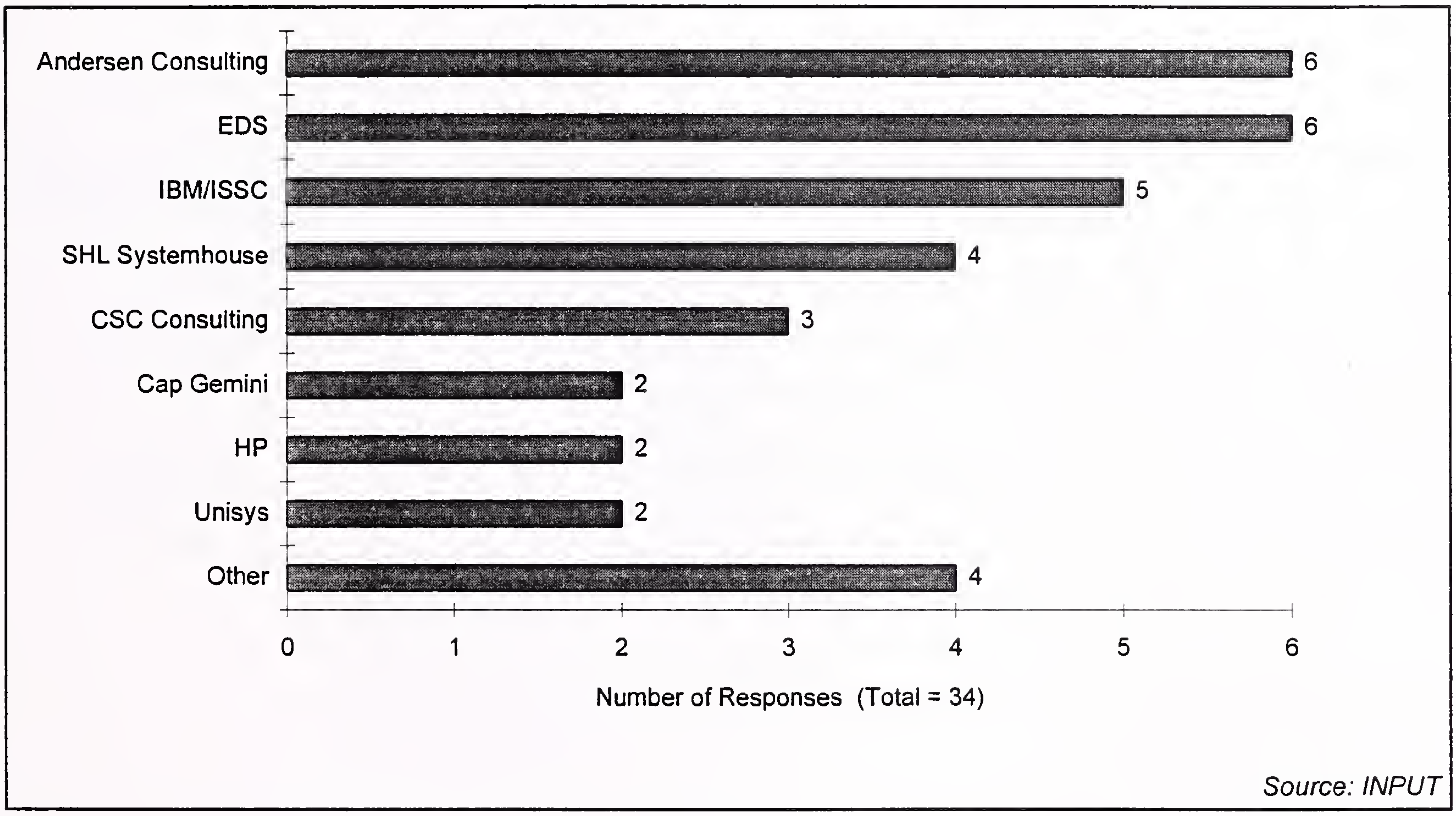
The similarity of the patterns of response indicates that Andersen Consulting, Ernst and Young, and CSC Index have good market image and have widespread coverage of their BPR activities within the SI and Outsourcing markets. It is interesting to note that no computer hardware manufacturers, other than the ISSC arm of IBM, were mentioned by the vendors as being perceived as top BPR competitors. This is despite many of the traditional computer companies, for example DEC and Unisys, aggressively promoting their range of service capabilities including BPR. This indicates that although many hardware manufacturer may see, and position, themselves as BPR vendors, they are not generally perceived by other vendors to be in this category.

2. Top SI Vendors

In an attempt to discover any correlation between top BPR vendors and top SI vendors, each of the vendors was also asked to identify those companies they considered to be their top competitors in the supply of SI services. Based on the responses received, the following chart (Exhibit III-10) identifies those SI vendors who were mentioned by at least two vendors.

Exhibit III-10

Most Mentioned SI Vendors



Source: INPUT

Most of the companies identified as top competitors in the SI area are different from those on the list of BPR competitors. The only company perceived as being both a top BPR and SI competitor is Andersen Consulting. In three instances, one division of a company was identified as a BPR competitor and another division was mentioned as an SI competitor. The organizations for which this occurred were:

- CSC Index and CSC Consulting Inc.
- IBM Consulting and ISSC
- Gemini Consulting and Cap Gemini

For those companies who intend having different divisions positioned in differing parts of the market, this indicates success in their marketing strategy. However, for those companies who do not want this difference in perception, this indicates a requirement for a more cohesive marketing approach.

Andersen Consulting was identified as a leading competitor in either BPR or SI services by all the vendors surveyed. Six respondents identified Andersen Consulting as a top SI competitor. No other vendor was mentioned by a company as both a top BPR and SI vendor.

The absence of any other "Big 6" CPA companies in the SI list plus the appearance of SHL, Cap Gemini, HP and Unisys indicates a shift towards technology-focused companies as being the predominant suppliers of SI services. The low number of mentions for large hardware manufacturers is due to other vendors' perception of them as concentrating their delivery of SI services within their installed base of customers . This means they are not seen as SI competitors within the overall market.

Based on the desire to be full service providers, expressed by most of the companies surveyed, this analysis implies that BPR and SI vendors need to change their marketing and sales messages to better convey the range of services offered.

IV

Users' Perspectives on BPR and SI

A

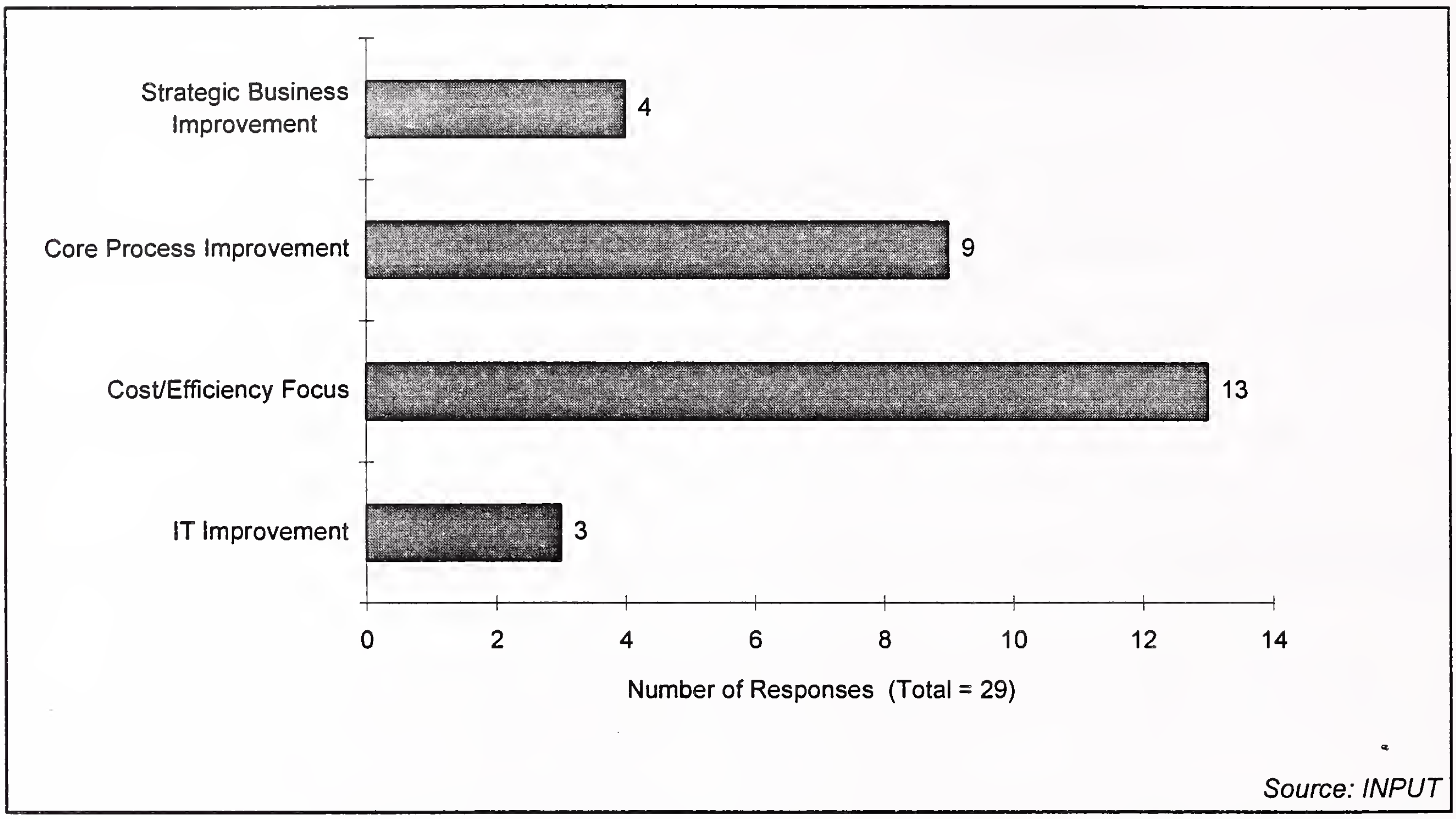
Users' Definitions of Business Process Reengineering

Just as vendors have a variety of views regarding the definition of what constitutes BPR, so do users. The key difference between vendor and user perspectives is that users are less likely to perceive BPR to be a mechanism for improving core processes or the overall business. Instead, users are more likely to concentrate on cost reduction with an implied acceptance that the functional processes in place are the correct processes and that the overall business organization is not in need of refinement via the BPR activity.

Based on discussions with users and on INPUT's subsequent collation of their views a spectrum becomes apparent as illustrated in Exhibit IV-1.

Exhibit IV-1

Users' Definitions of BPR

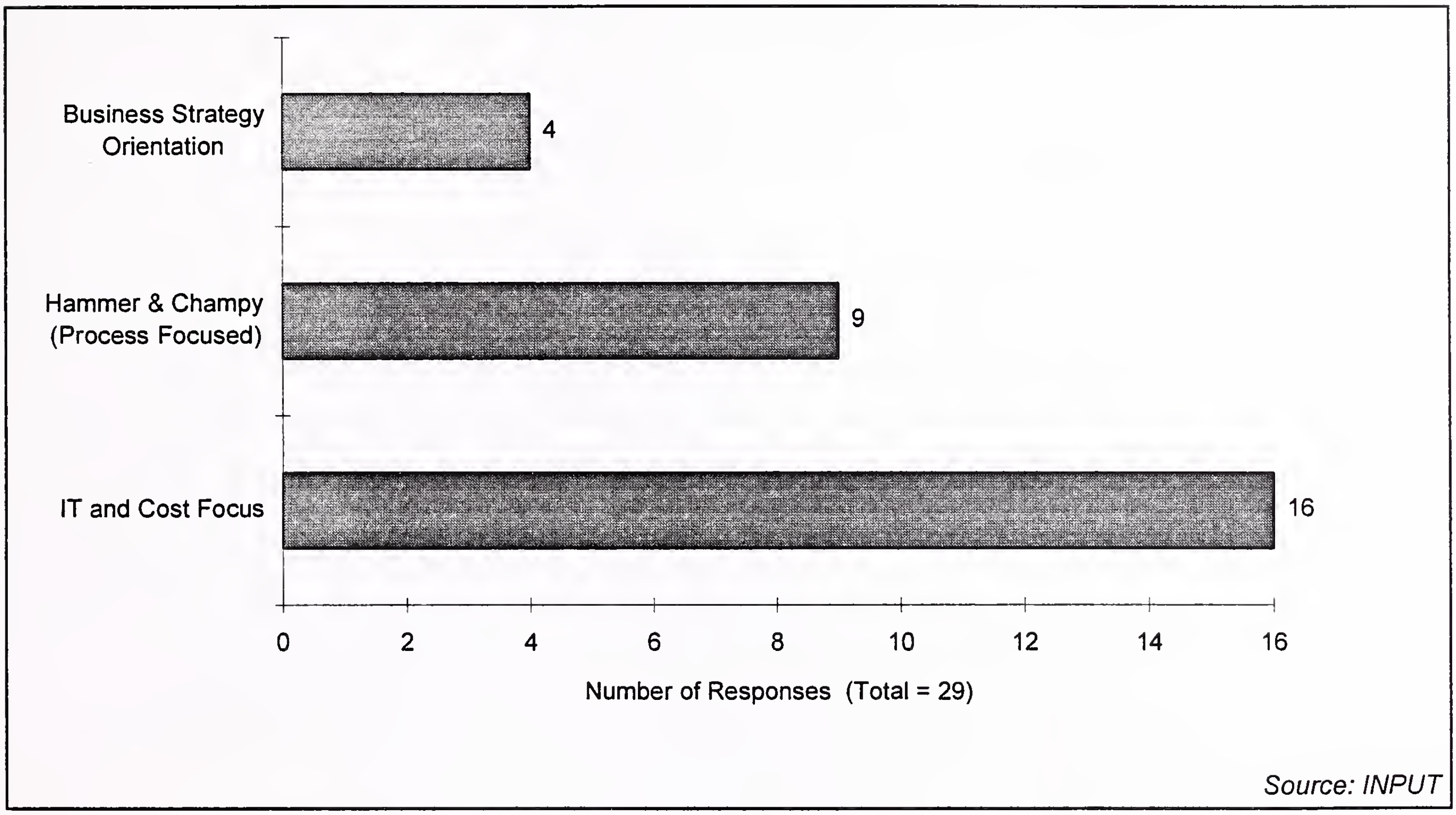


Source: INPUT

If these same responses are re-plotted using Hammer & Champy's definition as equivalent to Process Improvement and combining the Cost/Efficiency with the IT improvement responses then the variation in views becomes more pronounced, as shown in Exhibit IV-2.

Exhibit IV-2

Users' Views Compared to Hammer & Champy's Definition



Source: INPUT

Non-IS staff are more likely to view the usage and outcome of a BPR project from a process or an overall business perspective than are members of the IT department. This emphasizes the need for senior non-IT personnel to assume responsibility for BPR activities.

If the definition of the scope of a BPR project remains under the jurisdiction of the IT department then that scope is likely to be more limited. This may result in concentration on incremental improvement to existing processes and procedures and, therefore, a loss of opportunity to review areas in which far greater benefits may be obtained. Similarly, the use of a BPR vendor whose experience has a predominantly IT focus may have such an outcome.

A recent survey (of Inc. Magazine readers by MCI) indicated that 81% of respondents viewed focusing on the customer as their biggest competitive advantage. However, only 14% of the users contacted for this report (i.e. 4 out of 29) mentioned BPR as being a mechanism that considers customers' needs and ensures these needs are being adequately satisfied by existing business practices and processes. This dichotomy is due to the tendency for the users surveyed to see BPR as being internally focused and to concentrate on the IT-related enhancements instead of considering the customer-oriented benefits.

B

BPR and SI Interactions

1. BPR Generates SI Demand

All the user respondents identified an increase in the frequency and depth of SI projects as a result of their BPR projects. One user quantified the volume of this increase as up to 50%, however, a 20-30% increase appears the norm. This increase in demand does not necessarily imply an increase in hardware purchases in addition to software and services, since many users noted a move to integration and enhancement of existing systems. This increase opens up new markets to SI and Professional Services companies since user organizations who have previously performed all these services internally may need to consider outside assistance in order that the demand might be satisfied.

It should also be noted that a large proportion (40%) of the users did not expect the BPR activities to result in SI projects. This affects the demand for BPR services from SI vendors, as the users who do not anticipate the SI impact will see little reason to consider the SI vendor as a potential supplier of BPR services. The SI vendors who choose to move into the BPR arena must ensure that their sales force and consultants make prospective clients aware of the potential demand for the full range of services.

2. BPR Impact on Existing SI Projects

It is also important to recognize the impact that BPR activities have on existing SI projects. Often, existing SI projects, are stopped or canceled with the advent of BPR. Of the 16 respondents who identified ongoing SI projects as being affected by BPR, 63% (10 out of 16) indicated the impact on SI projects as one of :

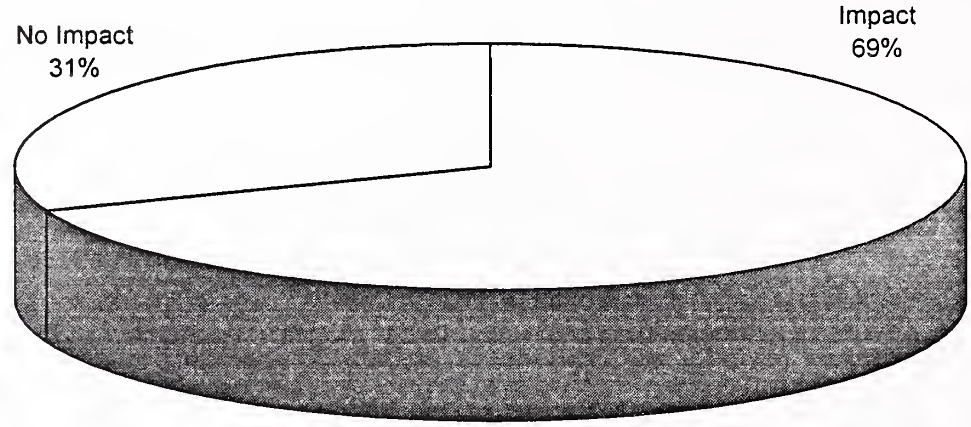
- slowed
- put on hold
- canceled
- re-architect
- redesigned

This is an occurrence not often discussed in relation to BPR, yet it may have significant impact on the reception of an external BPR vendor within the IS department of a user company. An IT group who are undertaking internal SI projects may be antagonistic towards a BPR activity that may cause ongoing SI work to be placed on hold or to be canceled completely. BPR activities driven from within the IS department are more likely to be timed to avoid conflict with ongoing IT projects yet this may not be in the best corporate interests.

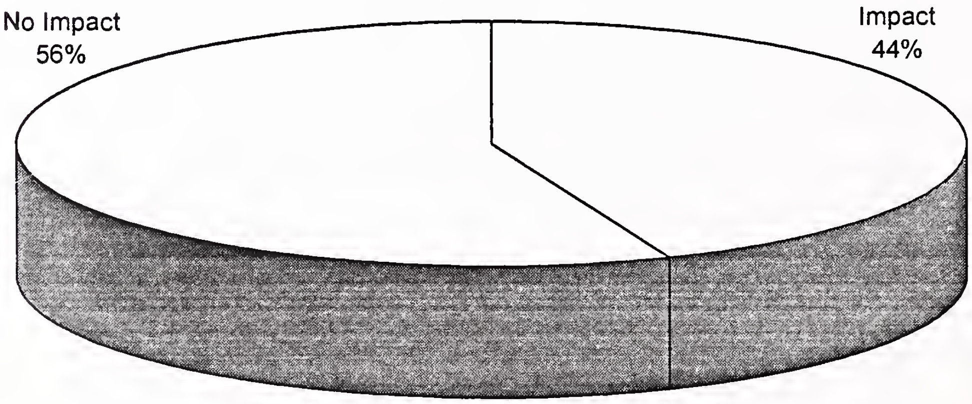
Analysis of user responses regarding the impact of BPR on existing SI projects supports this view. This can be seen by also taking into account the users' definition of BPR. It becomes apparent that the more an organization perceives BPR to have an overall business process focus then the more ready the organization is to stop, cancel or redesign ongoing SI projects. Exhibit IV-3 depicts the results of this cross-analysis:

Exhibit IV-3

Impact of BPR on Existing SI Projects



Proportion of Respondents with
Process/Business View of BPR
(13 Responses)



Proportion of Respondents with IT/Cost
Improvement View of BPR
(16 Respondents)

Source: INPUT

3. BPR Changes the Nature of SI Projects

Not only does BPR increase the demand for SI projects but these differ from the SI projects usually found in the user's organizations. Identified areas of difference include:

- Project scope
- Ease of implementation
- Increased payback

Traditionally, SI projects have clearly defined application boundaries. However, SI projects initiated by BPR activities are often defined in terms of business processes and, therefore, cross function and application boundaries. When these new SI projects are started the exact impact on applications may not be known because the requirements of the project are dictated in terms of improved business processes instead of specific applications that must be created or enhanced.

Often the new SI projects specify no new applications but, instead, require the integration of existing applications and processes. This emphasizes the earlier point regarding increased demand for software and services without a corresponding increase in hardware requirements.

The key change that impacts hardware is the move to client/server technology. This does not, however, imply an end to the usefulness of mainframe-based systems; instead, this change identifies an emerging role for this type of hardware as a central repository of corporate data (i.e. a data server) that may be accessed and updated from a variety of clients spread around a network.

The complexity that accompanies the integration of multiple applications and processes may appear to contradict the users' comments regarding ease of implementation of SI projects arising from BPR, but it does not. These user comments reflect the additional senior management attention and resultant impetus given to activities resulting from BPR.

When BPR is driven by senior executives who have the authority to overcome inter-departmental disagreements and the desire to achieve rapid return at a corporate level, then subsequent IT projects receive higher development priority and an increased readiness for acceptance within functional areas.

That IT projects which are generated from BPR studies have improved payback should be expected. Considered in terms of Hammer & Champy's definition of BPR, any result other than greatly improved payback would imply the BPR process had failed, the subsequent IT projects had failed, or the initial work should not have been classified as BPR.

There is, therefore, a general view that SI projects resulting from BPR differ from usual SI activities. However, a further question concerns the difference between BPR exercises initiated by SI projects and those BPR exercises initiated elsewhere. This time the answer is less clear in the minds of the user. Only two users perceived a difference in activity when the BPR activity was initiated by SI although an additional three respondents view the BPR and SI work as being integrated. This total proportion of 17% is a large variation from the 66% that identified a change in the SI projects arising from BPR (the users who viewed the activities as integrated are counted within each group). The probable cause of this variance is that many users do not perceive the organizational changes arising out of the implementation of new applications within the functional areas as related to BPR. This accounts for the small response rate (8 out of 29) when questioned on this topic.

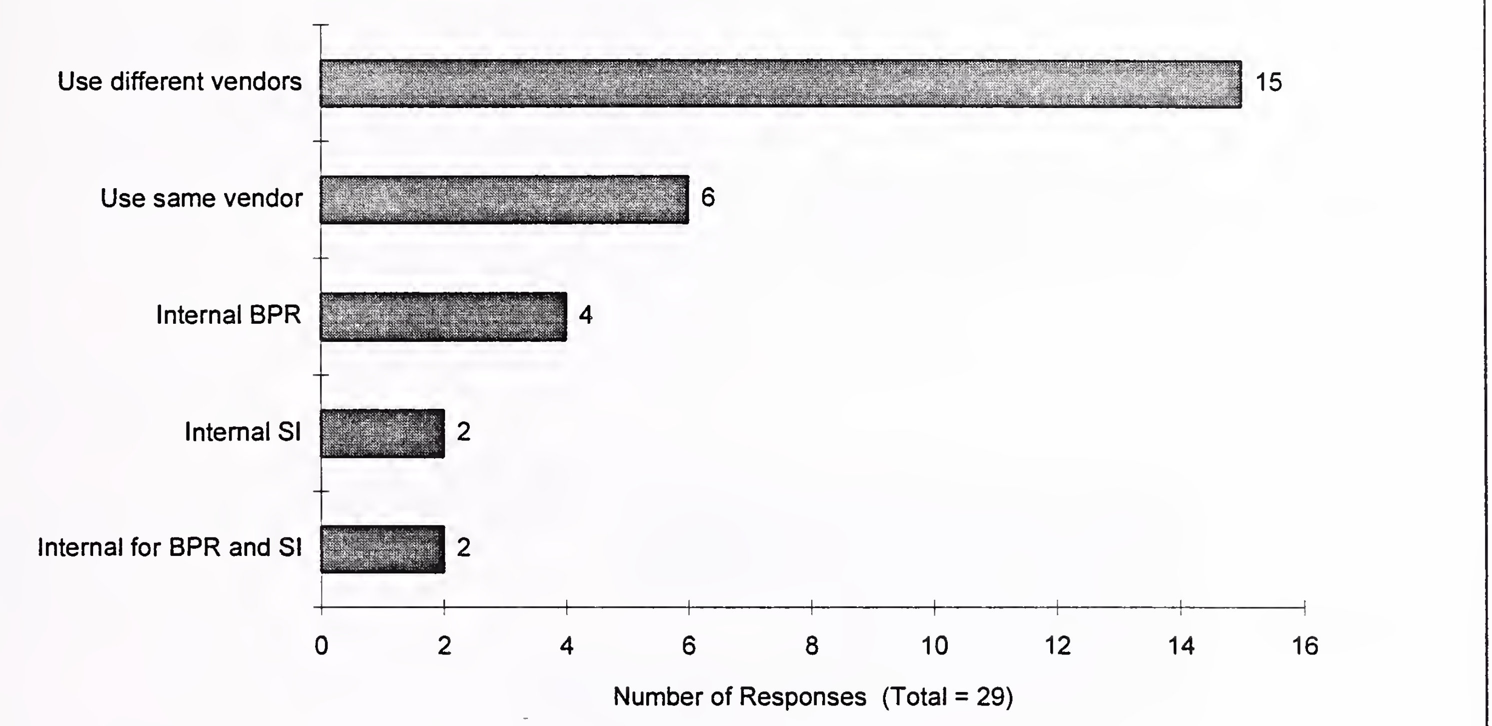
SI vendors who want to position themselves as offering BPR services should be aware of their own capabilities and understanding of this area of organizational change implementation as it may provide opportunities for additional Change Management services.

4. Users Expect to Use Multiple Vendors

As identified in the previous chapter, most vendors see the ability to offer a full range of services including both BPR and Systems Integration as a competitive advantage. However, user responses do not fully support this view. Exhibit IV-4 presents users' responses to the question of whether they had expected to use the same vendor for BPR as well as subsequent SI projects.

Exhibit IV-4

Vendor Usage for BPR and SI Projects



Source: INPUT

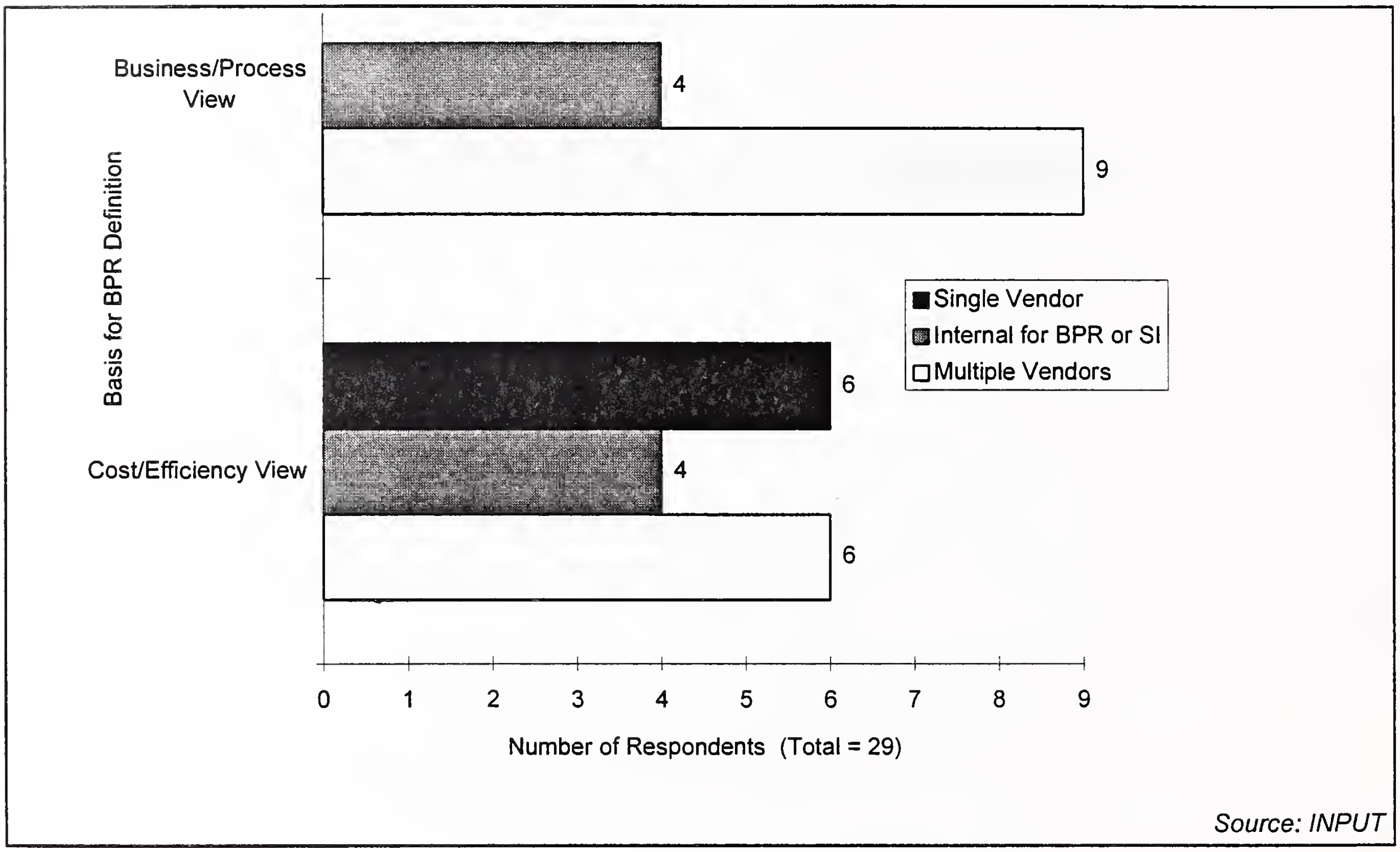
This user view has important implications for BPR and SI service vendors. The following should be considered by vendors in this part of the services market:

- The offering of a full range of services is a differentiator between vendors but it is not a key selection criteria for a user choosing a specific vendor.
- Users will consider using niche service providers for specialized services
- Vendors who offer only a partial range of services must consider forming alliances and partnerships with providers of complementary services
- Within companies who choose to perform their own BPR work there is a market for BPR training and facilitation.

While based on a restricted sample size, the following analysis indicates that it is possible for vendors to determine the potential for users to select single or multiple vendors depending upon their (i.e. the user's) definition of BPR.

Exhibit IV-5

Relationship Between BPR Definition and Vendor Usage



Source: INPUT

This chart indicates that user organizations who view BPR from a high level, strategic business or business process perspective are less likely to assume the same vendor will supply the BPR and SI services. This is encouraging for SI vendors who do not offer BPR services as they are not eliminated from the SI portion of this market. However, they need to have a relationship with the BPR suppliers so that they may be recommended if the opportunity arises.

Although the vendor's ability to offer a full range of services is not a selection criteria for the user, it does offer the BPR vendor an great advantage when the user selects an SI vendor.

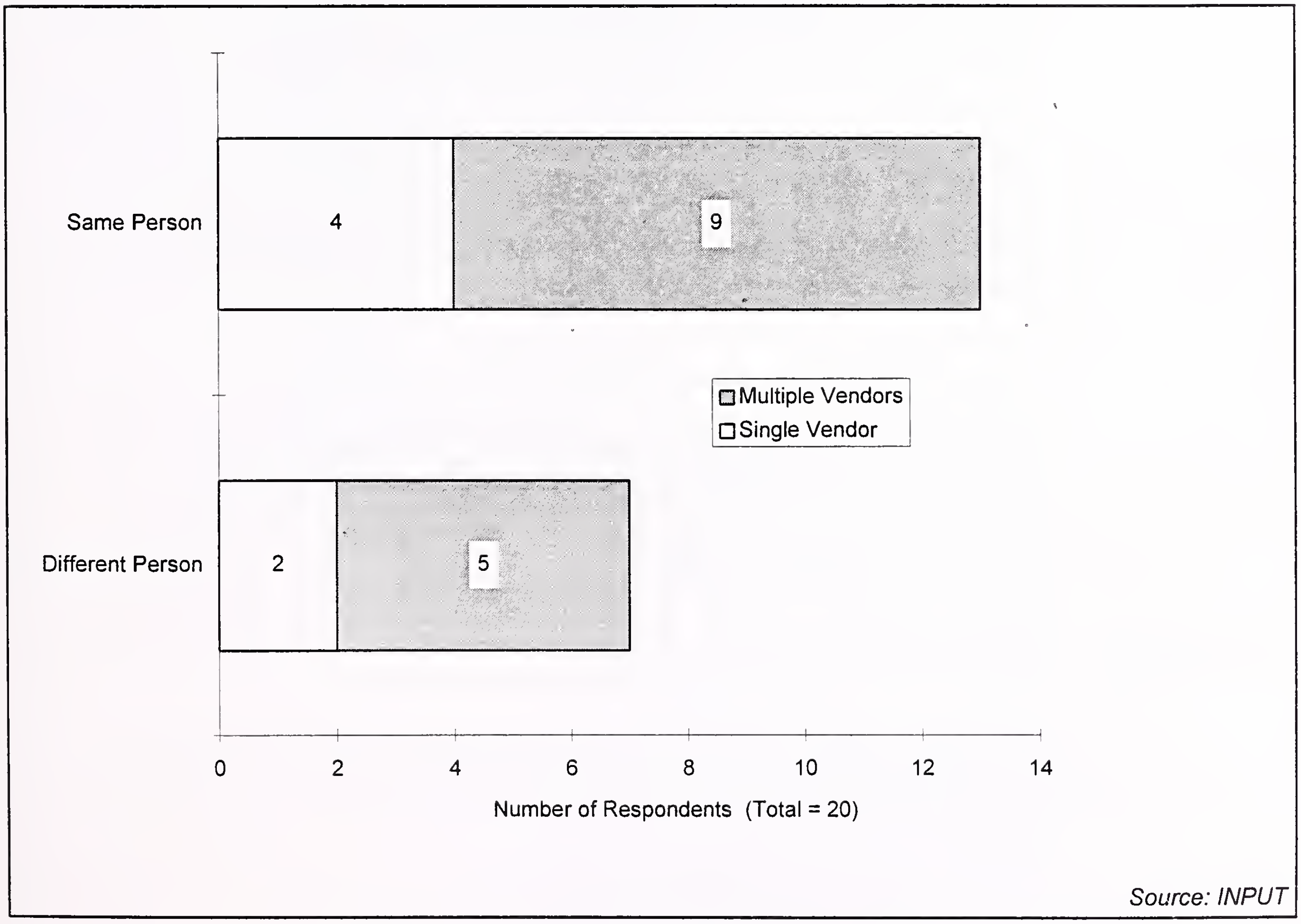
This (non-BPR) category of SI vendor may also want to change their sales approach toward companies who have a view of BPR based on cost reduction. Within these companies, the SI vendor should reduce the users emphasis on BPR and enhance the message of the effectiveness of IT solutions as a means of cost reduction and enhanced efficiency.

5. BPR and SI Selection Responsibilities

In the majority of companies, responsibility for selection of external vendors for BPR and SI projects does not lie with a single person. Analysis of the total sample, regardless whether the same person is responsible for selection of both BPR and SI vendors, is shown in Exhibit IV-6.

Exhibit IV-6

Responsibility for Selection of BPR and SI Vendors



Source: INPUT

It can be seen that when a different vendor is to be used for SI work than for the BPR work then the decision making authority for vendor selection is more likely to rest with different users. This means that vendors must build multiple relationships within the user organization if they are to succeed with both service areas.

6. Contract Implications

From the user perspective, the number and type of contracts involved in the BPR and related SI work is dependent upon the number of vendors involved. However, in those cases when a single vendor performs BPR plus subsequent SI work then the contracts usually have conditional clauses included. This ensures vendors are successful at one phase prior to continuing with the next phase.

C

BPR and SI Expenditures

1. BPR Drives SI Expenditure

Each of the surveyed users expected the BPR activities to drive the demand for SI and therefore the SI expenditure. In some cases, BPR had been chosen as the process by which required changes in IT architecture and/or applications should be identified. In other instances, there was an anticipated increase in SI due to the BPR activities being expected to identify a requirement for improved information and data flow as part of the organizational and process changes

2. BPR Expenditure Compared to SI Expenditure

There is a mixture of views regarding the relative spending levels of BPR compared with SI. User opinions are evenly spread, one third indicating BPR spending exceeds subsequent SI costs, one third indicate equal expenditure for each activity and one third show SI expenditure exceeds associated BPR work. As discussed in Chapter III, the vendors identified expenditure on SI as being four times the expenditure on BPR.

Most users expect these two areas to become more integrated over the next three years and so the difference in expenditure levels will become more difficult to define because one is seen as part of the other

D

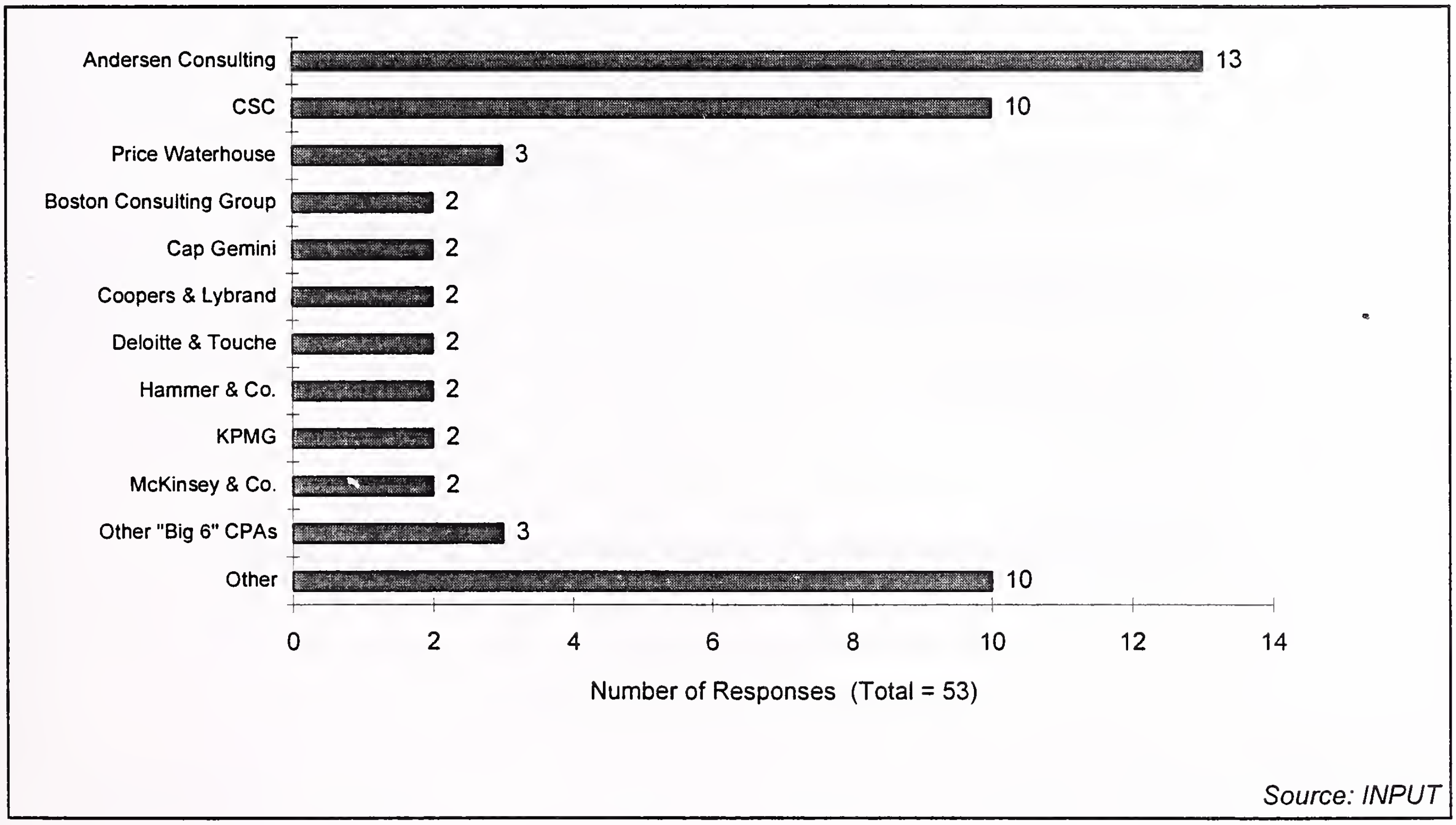
Top BPR and SI vendors

1. Top BPR Vendors

Each of the users was asked to identify those companies they considered to be the top suppliers of BPR services. Based on the responses received, the following chart identifies those BPR vendors who were mentioned by at least two users:

Exhibit IV-7

Most Mentioned BPR Vendors



Source: INPUT

This illustrates an advantage that Andersen Consulting and CSC have over the other BPR vendors in terms of market image.

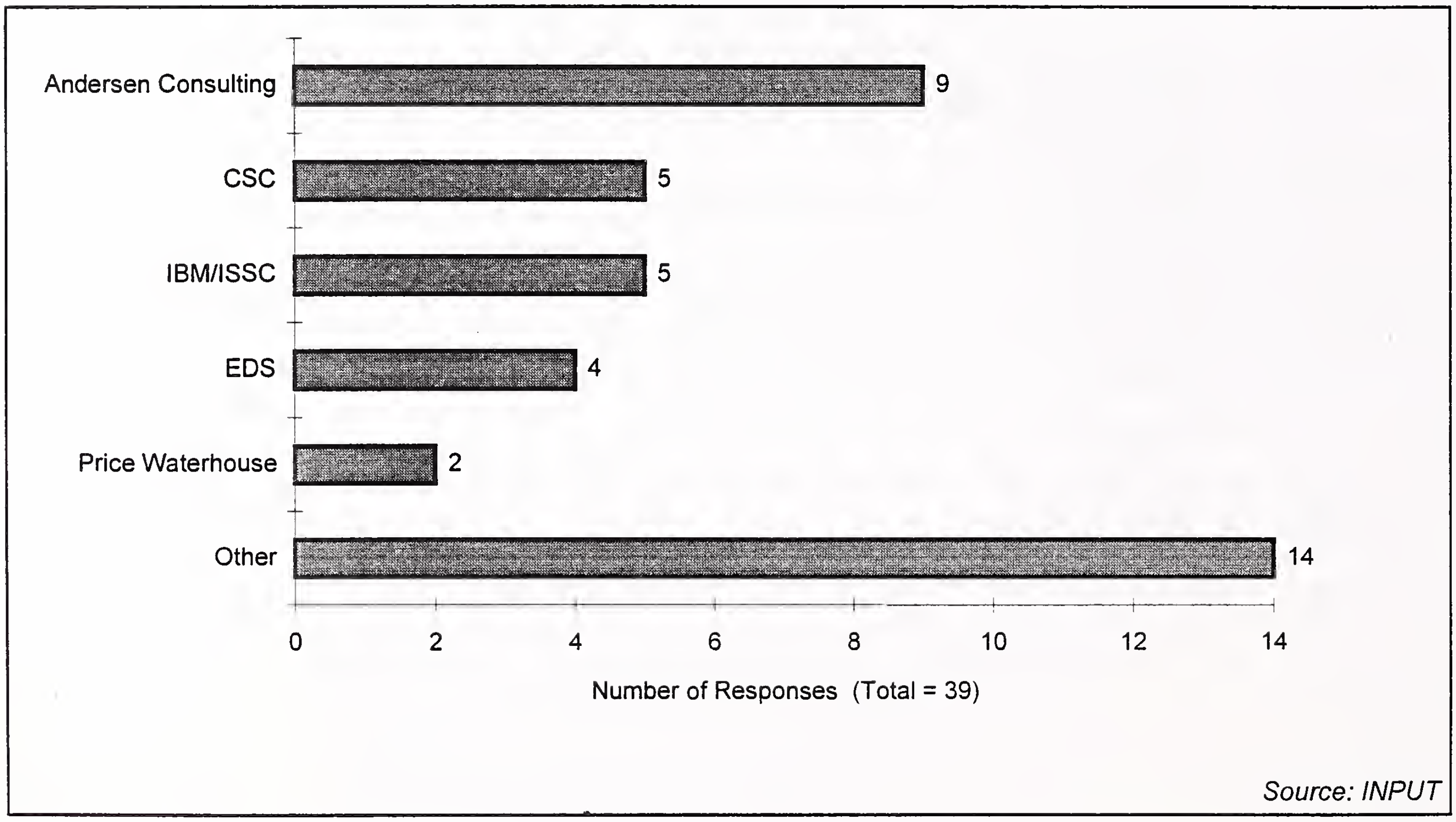
No computer hardware manufacturers were mentioned by the users as being perceived as top BPR vendors despite many of the traditional computer companies, such as DEC, IBM and Unisys, aggressively promoting their range of service capabilities. This indicates that even though these vendor companies may claim strength in BPR the users are yet to be convinced.

2. Top SI Vendors

The spread of companies, as shown in Exhibit IV-8, who were mentioned as top SI vendors is not so dramatic as the spread of BPR vendors. It does, however, indicate that Andersen Consulting and CSC are perceived as capable of delivering a full range of BPR and SI services. Andersen Consulting were mentioned in both categories by 7 companies and CSC by 4 companies.

Exhibit IV-8

Most Mentioned SI Vendors



Source: INPUT

The absence of hardware companies, other than IBM, from this list is seen by INPUT to be due to the sales focus of these companies on their installed base. While existing customers may perceive their hardware and software suppliers to be SI vendors, this sample of the general market does not share this view.

The bias of these surveyed companies, due to the requirement for the users to have completed both BPR and SI activities, also contributes to the absence of additional large computer companies.

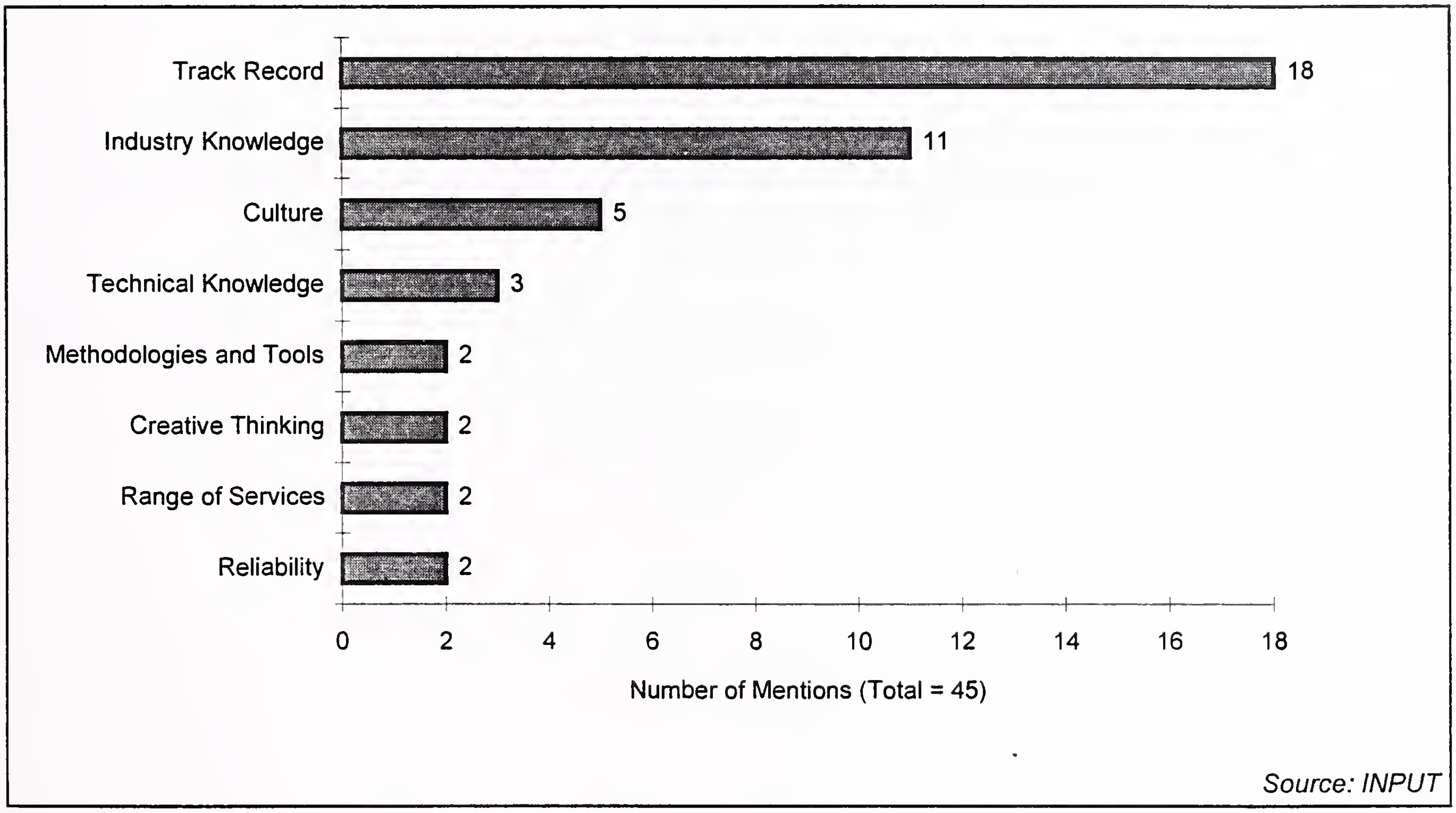
E

BPR Vendor Characteristics

As users move their focus of attention from SI to BPR then the characteristics change that they look for in prospective vendors. As shown in Exhibit IV-9, industry knowledge and demonstrable experience in BPR activities are essential requirements for those companies bidding for BPR business.

Exhibit IV-9

User Requirements of BPR Vendors



Source: INPUT

The low number of mentions (2 out of 45) for Range of Services confirms the finding that only 21% of users who expected to use the same vendor for BPR and SI compared to the 52% who expected to use different vendors.

There are two main implications for an SI vendor intending to offer BPR services.

- They must leverage existing SI projects to identify, bid, and successfully complete associated BPR activities. The incumbent SI vendors have great advantage for this BPR work over other vendors as they (the SI vendors) are in place and have an existing relationship with the user.

- SI vendors choosing to partner with BPR specialists should consider these user-identified characteristics as selection criteria when choosing their partners.

INPUT research published last year in the *Systems Integration Opportunities in Re-engineering* report highlighted a similar set of requirements. In this 1993 report, vendors rated

1. Similar engagement experience

2. Vertical industry focus

as those elements they found to be important when establishing a successful BPR service offering.

V

Trends and Directions

Increasing demand for BPR services has a multi-dimensional impact on SI. No portion of their market remains unchanged. Users, vendors and the market are each in a state of flux. This chapter identifies the trends and market directions for vendors who participate, or who are considering participation, in these markets.

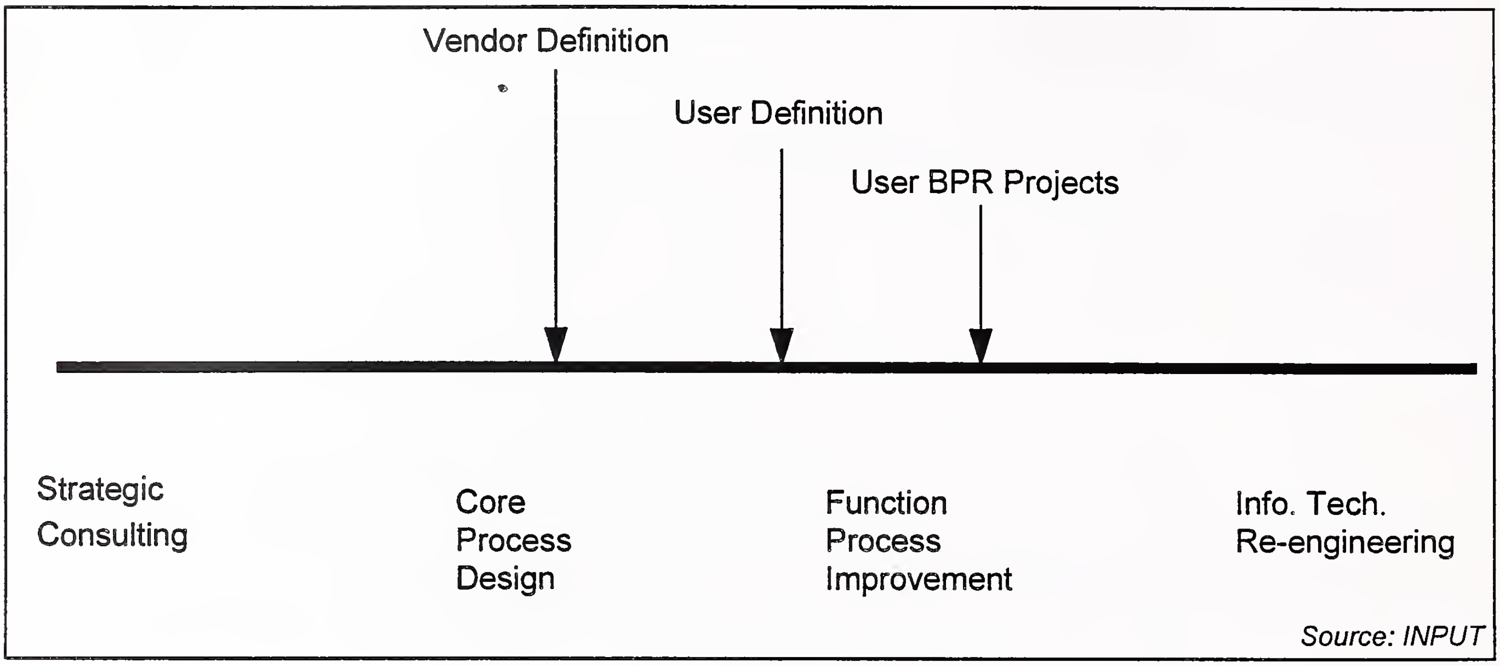
A

What Is BPR?

There is a lack of consensus on the definition of BPR. Vendors do not agree among themselves, users do not agree with the vendors and the majority of projects referred to as “BPR projects” match definitions from neither group. Exhibit V-1 illustrates this diversity.

Exhibit V-1

BPR Definition Gap



Source: INPUT

The phrase "Business Process Reengineering" is over-used. It has in many cases superseded "Rightsizing" as a euphemism for cost cutting. Cost reduction is internally focused, BPR allows users to look outside their organization and to review how best they can provide value to their customers.

As users gain experience and comfort with the process then their definition of BPR will change. Users will expect re-engineering to include examination and enhancement of core processes. This is in addition to improvement of functional processes and driving the enhanced use of information technology.

Vendors who have traditionally offered strategic business consulting services claim that BPR is just a modern name for a portion of the work they have performed for years. However, some companies who have only delivered implementation services as an adjunct to their products sales are now claiming these same services are BPR. This is causing confusion.

It is in the interests of the users, and of the vendors who offer more business oriented services, for them to more clearly define BPR and to differentiate between technology-based services and business-based services.

INPUT believes the BPR services market will become more segmented as it matures. Currently, there is little differentiation in the positioning of vendors offering services across the spectrum compared to niche service providers (e.g. BPR facilitators) and compared to SI vendors who concentrate on technology implementation - they all claim to be BPR vendors. This positioning will change in response to users becoming more sophisticated in their service requirements.

The diversity of definition illustrated in Exhibit V-1 will evolve over the next 3 years so that there is a convergence of definition around core process redesign.

B

BPR Impact on SI

1. Range of Services

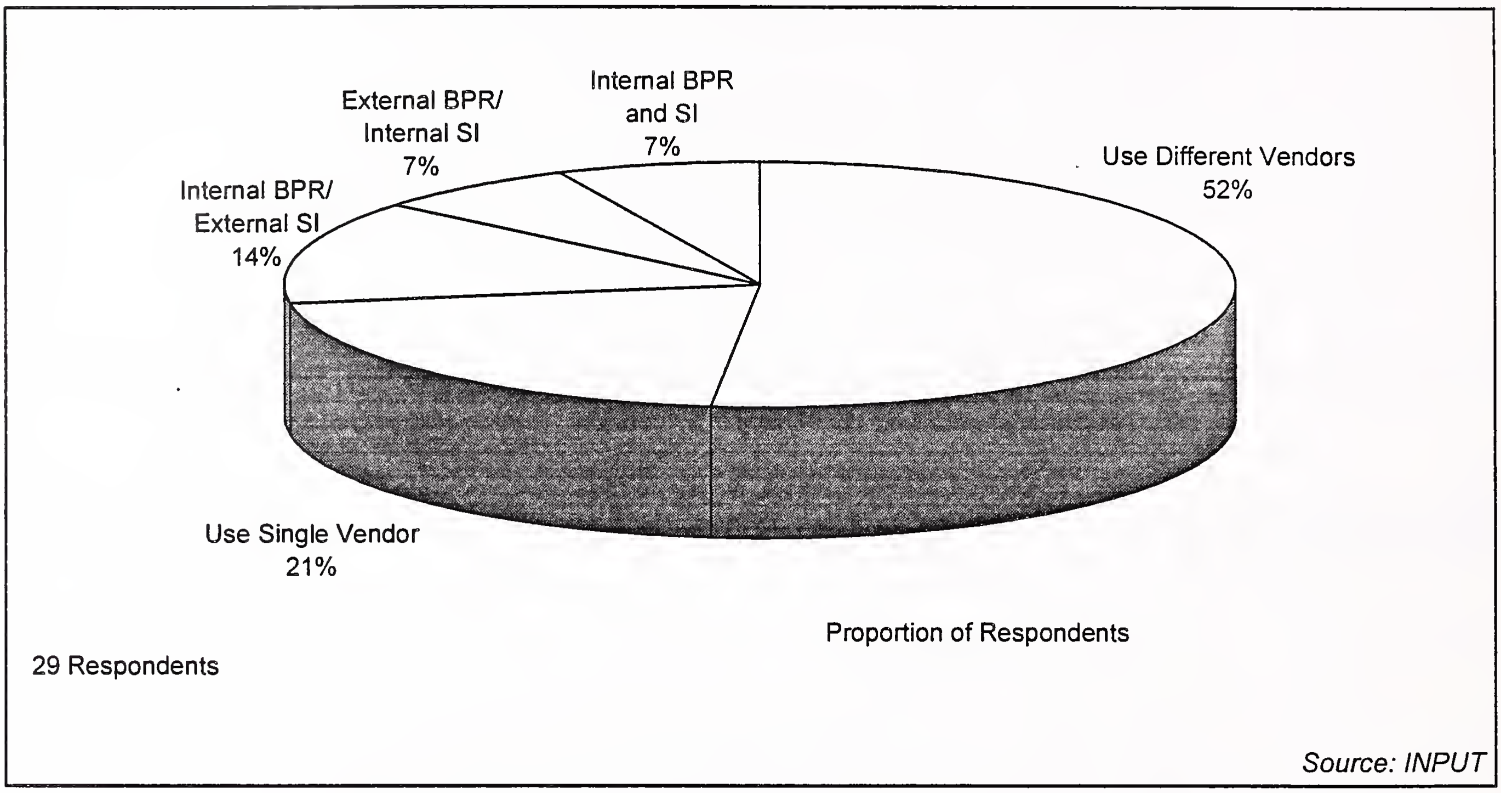
Most vendors are attempting to expand their range of services to include BPR. Some are renaming existing services to call them BPR services.

For the vendor offering strategic consultancy, BPR provides an opportunity to extend their range of services into areas of operational and technological planning and SI. As discussed in Chapters III and IV, BPR activities generate SI projects and therefore vendors who perform BPR are well positioned to obtain additional business if they can deliver a full range of services.

However, the extent to which vendors should expand their service range should be tempered with consideration for their users' views on using the same vendor for BPR as for SI. Currently, only 21% of users choose a single vendor to provide both BPR and SI services.

Exhibit V-2

Source of BPR and SI Services



Source: INPUT

Less than half (40%) of the users surveyed had not expected BPR to result in SI activities. As additional users anticipate the close association between SI and BPR then the percentage of users expecting to have one vendor perform BPR as well as SI activities will increase.

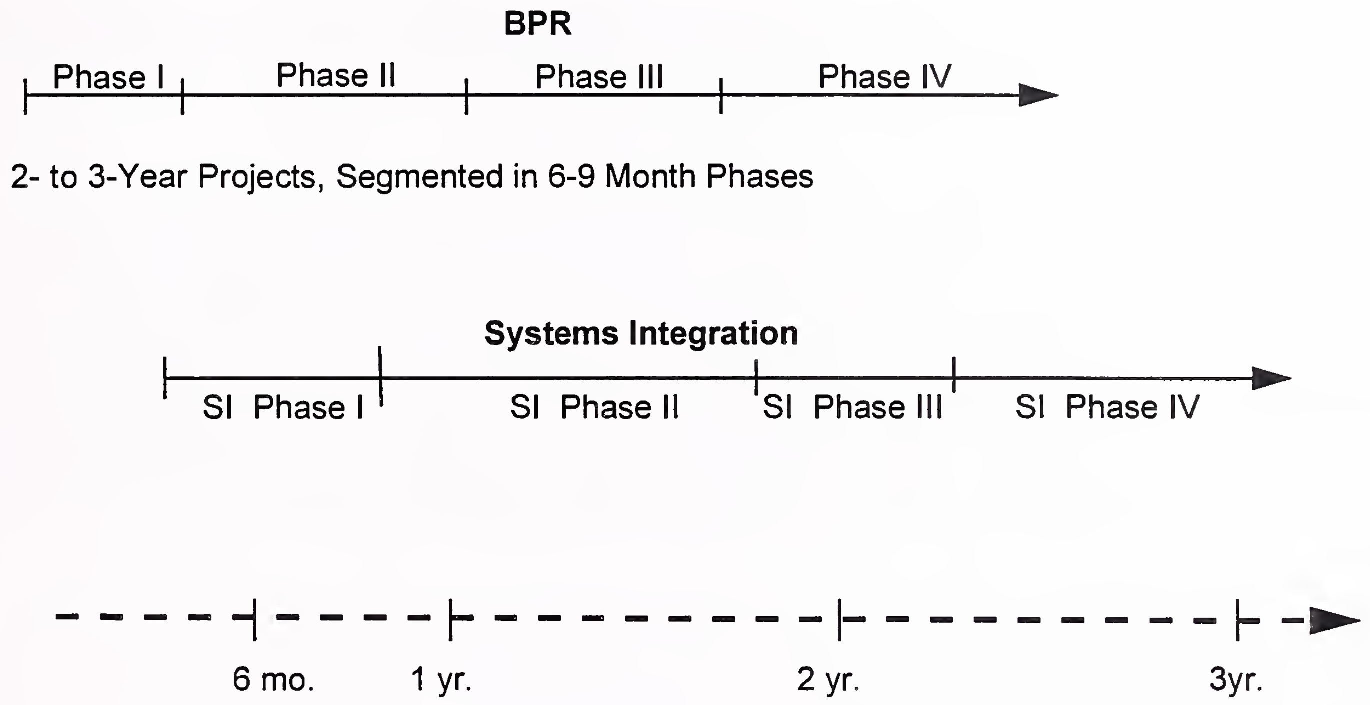
2. Projects

BPR is becoming the starting point for change within many organizations. As this movement grows then the timing of related SI projects will become more coordinated. The high percentage (63%) of SI projects that are slowed, reworked or canceled implies a disconnect exists between the initiation of these activities and BPR within the organization.

Over time, this situation will improve and SI will follow BPR activities. However, the trend for projects to be phased will continue and so initial SI activities will commence prior to the completion of an overall BPR exercise.

Exhibit V-3

Example of BPR and SI Project Phases



Source: INPUT

C

Vendor Recommendations

There are 6 key areas of consideration for vendors entering into the BPR service market:

- Partnerships
- Pricing
- Skills
- Sales

- Risk
- Positioning

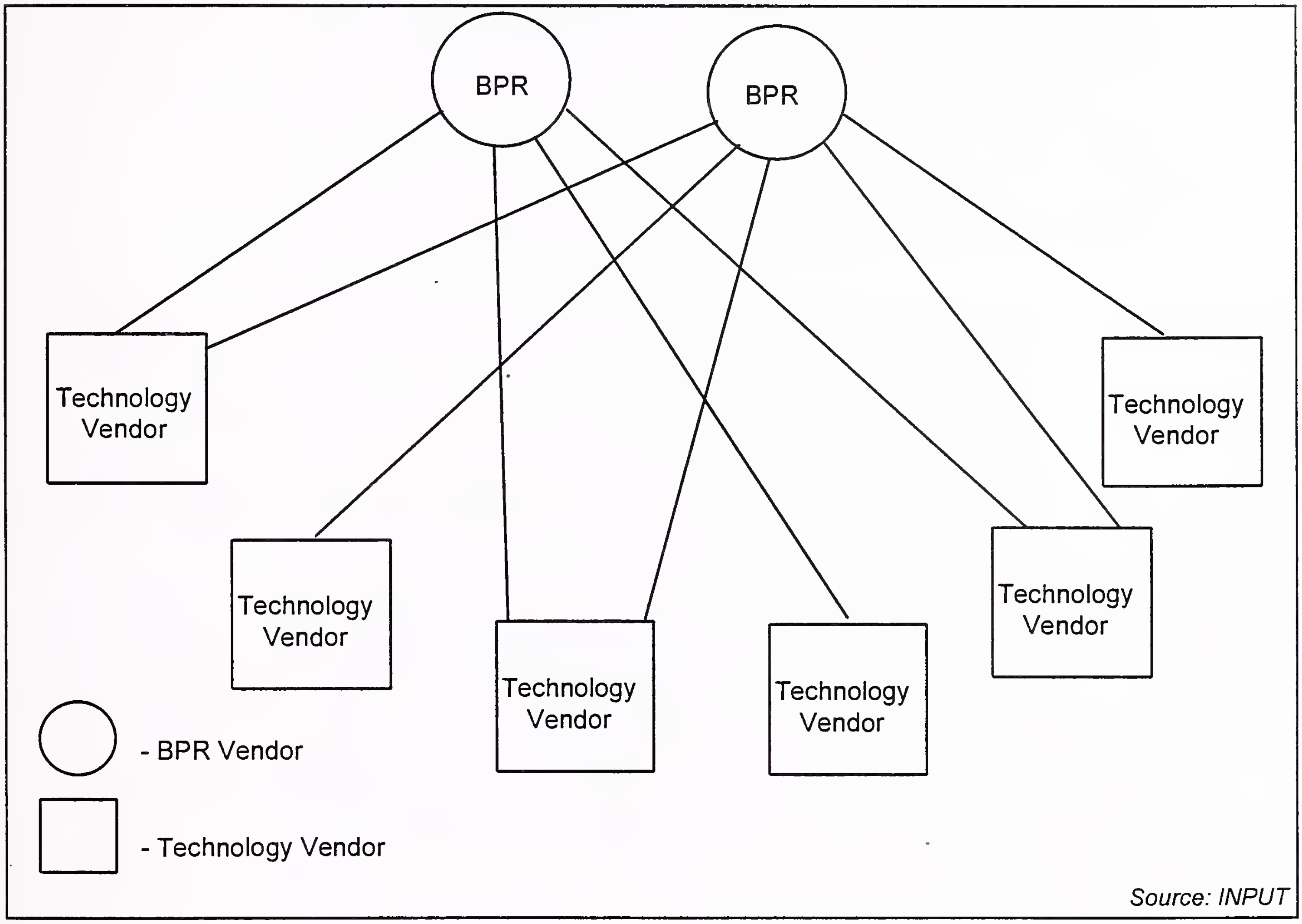
In practice, these areas have interdependencies although they are presented separately.

1. Partnerships

Partnerships provide a route for SI vendors to move into the BPR market without having to ensure all the necessary skills are available in-house. They also provide a route for the high-level management consultancies to move, if they wish, into the SI market. However, there are far more SI vendors than BPR vendors, which means that the SI vendors need to compete for the attention of those consultants offering BPR services.

Exhibit V-4

BPR/SI Vendor Relationships



Source: INPUT

Although some of the larger management consultants have multiple partnerships, others have one or two strategic alliances. This reduces the options of the SI vendors even further. The large computer manufacturing companies have been successful developing product-based relationships with the consultancy companies in the past. This experience will aid these technology-based companies establish and maintain BPR relationships in the future.

2. Pricing

Value-based pricing is more common in BPR than in other SI and PS service areas. This is due to a number of reasons including:

- Vendor desire to share in potential high rewards from BPR
- Improved user/vendor partnership relationship
- Recognition of inability to define certain elements of risk

Pricing is a critical factor when considering partnerships between SI and BPR vendors. Which vendor provides the value when one vendor identifies, as part of the BPR process, a required change and another implements the change as part of an SI project? How should the reward be apportioned as part of a value-based pricing model? This issue can be overcome but it has to be considered as part of partnership planning.

Range-based and Phase-fixed pricing models are also used within the BPR market. These have the benefit of providing pricing strategies for the users that are closer to fixed-price, and time and materials, both of which are the preferred models with the SI market. Pricing is covered in more detail in the 1994 INPUT report *Contractual Approaches to Project Risk Reduction.*

3. Skills

The skill set required for BPR is different from that required for SI services. This is an important reason for SI vendors to consider partnering with BPR vendors especially during the early stages of their BPR involvement.

Exhibit V-5

Additional Skill Requirements

Technology-Based Skills	People-Based Skills
Wide range of technical knowledge	Depth of experience
Design of complex systems	Executive-level communication ability
Rapid development techniques	Enhanced project management
Rapid deployment techniques	Capable of creative thought

Source: INPUT

4. Sales

SI vendors moving in to the supply of re-engineering services must change the way they sell. Within SI, consultative selling has been in use for the last few years. However, while this basic approach remains valid, it is no longer sufficient to target the CIO and MIS director as focus of attention.

The sales force can only be successful selling BPR services by developing a strong relationship with senior corporate executives. As has been seen, those responsible for choosing BPR vendors are not the same people as choose SI vendors. It is therefore, essential that the sales force review and enhance the range of contacts they have within an organization.

The traditional consulting companies have a major advantage over the SI companies in the area of sales as these consultancies have had years of experience developing their executive-level relationships. This is another area in which recruitment of people from the consultancies will enhance the potential for an SI vendor to succeed in the BPR market.

5. Risk

Risk will always be present in BPR projects. BPR, by definition, seeks to achieve high return on investment yet many projects, up to 70%, are said to have failed. However, this failure rate does not take into account the number of users who have started BPR, stopped or failed to reach their goals and then restarted and completed successfully.

The critical risk factors to be considered by vendors are:

- executive-level commitment within the user's organization
- user involvement with the project
- level of realism in user expectations
- user experience with BPR
- complexity of technology

Without executive support for the BPR project, and for subsequent SI activities, success will be unattainable. The nature of these projects implies dramatic change which will require the visibility, influence and strength of the most senior corporate executive, to be successful.

User expectations have to be managed by the vendor to ensure the anticipated changes to organizations, processes and technology are viable. In addition, these changes must have an impact on the metrics that require improvement. For example, if Blue Cross (see Case Study) had chosen to look only at decreasing the time spent working on a claim then they may have reduced this from just over 5 minutes to 2.5 minutes, a 50% improvement. However, this would have had little impact on the overall time spent passing a claim through the approval process. This is because the claims spent a total of ten days waiting to be worked upon. Therefore, changes to the time spent physically working on a claim had minimal impact on the overall time taken to process the claim.

6. Positioning

A vendor's positioning strategy must consider the user's perception of the vendor. A vendor who is not perceived as a BPR service provider of is unlikely to be successful in winning BPR business. Similarly, strategic consulting vendors are unlikely to succeed in the SI market.

Vendors who choose to offer a full range of services should consider how they are currently positioned in the minds of the users and where they want to be positioned. They should then identify and implement a strategy to achieve this change. Options within such a strategy include:

- Partnering
- Offering new services within the existing base as these customers may be more receptive to the changes
- Expanding the content of existing services, e.g. include BPR activities with SI services
- Acquisition of BPR companies by SI vendors

E

New Markets

1. BPR Facilitators

BPR should not be performed once and then forgotten. In today's business environment BPR is a process that changes an organization so that it is prepared for further change. This is causing a new service market to emerge, the market for BPR facilitators.

A facilitator service guides users through the BPR process. As such, the BPR activities are completed by internal staff but under the direction of the service vendor. This ensures a reduced cost to the user, as their expenditure on external resources is reduced, but at the same time they receive training and guidance. In this fashion, the user is better prepared to embark upon future projects with little or no external assistance.

2. Methodologies

Another new market is that of BPR methodologies. Each BPR and SI vendor has their own mix of service methodologies. However, as discussed within this report, a major problem area is in the handover from one vendor to another for different services. BPR vendors who train users in their methodology and who also ensure that SI partners utilize the same, or a complementary, methodology will have a competitive advantage. Not only will the handover issue be minimized but also the users is more likely to return to that same vendor for future services.

A

Appendix: Case Study

The following case study discusses work conducted by CSC Index Inc., the management consulting arm of Computer Sciences Corporation (CSC) and is reprinted with permission from CSC.

Blue Cross of Washington and Alaska (BCWA)

A quiet corporate campus in Mountlake Terrace, Washington, seems a long way from the debate over health-care reform that's gone on this year in Washington, D.C. But here, at the suburban Seattle headquarters of Blue Cross of Washington and Alaska (BCWA), a major reengineering effort has confronted the efficient administration. Through reengineering, this $650 million (revenues) insurer is markedly reducing administrative costs while improving service to customers and healthcare providers. In the meantime, it is also proving that reengineering doesn't necessarily require a huge budget and years of patience for results.

BCWA traces its interest in reengineering to two pairs of numbers. The first pair - 13.5% vs. 9% - contrasted how high BCWA's operating ratio had crept when compared to the national Blue Cross/Blue Shield system average. The ratio, which measures total administrative costs as a proportion of revenues, was "unacceptable," says Betty Woods, president and chief operating officer at the time and now CEO. "We realized that we would not be here five years (into the future) if we still had a 13.5% operating ratio."

The second pair of numbers came from an analysis conducted by CSC Index. The consultants studied BCWA's entire claims process, from the submission of a claim through its various hand-offs, audits and reviews until final "adjudication," or payment. The goal was to compare the actual time spent working on the claim to total turnaround time. BCWA expected a gap between the two numbers; instead it found a canyon: A typical claim took 10 days to complete but required only 5.2 minutes of actual work time. Most of the time was consumed by the inefficient design of the claims process itself. "When I saw those numbers—10 days, 5.2 minutes—it blew my mind," Woods says.

There was still another motivation for reengineering. BCWA sought to escape the "three-up, three-down" underwriting cycle that the insurance industry has experienced for the last 30 years. In a near-Biblical pattern, underwriting revenues rise for three years before entering a three-year period of decline. Economists differ over what causes the cycle, but what is certain is that the last downturn, which ended in 1989, was brutal for BCWA. Contract enrollment plunged nearly one-third between 1986 and 1988, and underwriting revenues dropped so steeply that the organization was forced to cut some $12 million from its budget, and considered merging with a competitor. After this brush with disaster, BCWA vowed to escape the tyranny of the roller-coaster cycle.

An independent, non-profit organization, BCWA provides healthier coverage to individuals, small groups (under 100 employees) and large groups. It also operates a health-maintenance organization, a third-party administrator, and a life insurance company. Over the years it has enjoyed a reputation for quality service and good net income growth. But in 1991 its management sensed a huge change underway in its industry - especially with increasing government concerns about soaring health costs on both the state and federal levels.

In December 1991, BCWA formed a reengineering team with a clear mission from Woods: get the operating ratio down and find every possible way to drive out costs. Furthermore, the reengineering effort would have to be self-funding, so that the savings it discovered would pay for its effort. The BCWA/CSC Index team drew up a list of 18 initiatives, blending "quick hits" that could be implemented rapidly with longer-term actions. The list covered key business processes throughout the organization, from claims and customer service to training and compensation.

In less than two years, the reengineering initiative had cut the all-important operating ratio from 13.5% to 10% by mid-1993, and BCWA believes it can reach 7% by 1995. In addition, the organization can issue new membership cards in five days, compared with four weeks for the old process. And the time it takes to turn around underwriting quotes has been slashed by 80%. As a result, BCWA's market share had increased from 14% in 1991 to 18% by mid-1993.

The reengineering team's challenge to be self-funding has been met—and surpassed. Cost savings are 30% higher than the original project and produce benefits along the way and not all at the end, says Eric Rohlman, senior vice president operations. "In the past, we often had undertaken initiatives with a lot of enthusiasm, only to see them fizzle. These disappointments fed a culture of 'We shouldn't take risks.' The quick hits proved that we were doing it—we were seeing results."

An important quick hit was to increase the number of claims submitted electronically instead of through the mail. "We calculate very conservatively that we save $1.34 for every claim that is submitted electronically," Rohlman says. "When you figure that in 1993 we'll process over 4 million claims, you can see the potential."

At the start of 1992 less than 11% of Blue Cross's claims from health-care professionals were submitted electronically. The reengineering team set a goal of 20% by year's end. "We had to get the corporate shoulder behind the wheel," Rohlman says. That meant calls on doctors' offices to encourage use of electronic submissions, meetings with computer vendors to smooth out glitches in electronic networks, and two critical policy decisions: 1) not to charge doctors a transaction fee, and 2) to accept most formats that doctors wanted to submit (BCWA's computer's can reformat the data into a standardized layout, eliminating a major potential problem).

Significantly, the push for electronic submissions was made without investment in new technology. "We made a conscious decision not to do that," Rohlman says. "The technology we had wasn't great—but it was sufficient. We wanted to harvest what we already had."

The reengineering team surpassed its 20% goal of electronic submissions by year's end; by March 1993, it exceeded 30%. BCWA's vision for the future is nothing less than 100% electronic submission—a paper-free system. These efficiencies have already enabled the organization to reduce head count in Benefit Services, which handles claims, from 457 to fewer than 400 employees.

Employees no longer needed in claims have been retrained and transferred to such areas as sales and customer service.

Until the paperless environment is attained, however, some data entry will be required as a necessary evil. So another reengineering initiative, "Quick Entry," has tackled the data entry bottleneck. Over the years, the process for entering a claim on a BCWA computer had become so complex that the company needed three to five months just to train someone how to do it. A proficient claims adjust could handle, at peak, about 32 claims per hour.

The reengineering team asked claims processors a simple question: What should the new computer screen look like? A lot simpler and cleaner, came the responses. Screens had become too complicated and had long ago ceased resembling the paper forms that provided the data. For the first time, BCWA's programmers met with claims processors and worked directly with them to slim down, clean up and improve the screen.

Now claims processors can be trained to enter claims in just two hours. Once up to speed, they can process as many as 45-50 claims an hour—an improvement of at least 40%. Now the organization can hire temporary employees to do routine data entry during busy periods, freeing up claims examiners to focus on serving customers during the day instead of playing hunt-and -peck on a keyboard. Despite early concerns that errors would increase under the new systems, they have actually decreased.

The new process got an unexpected test in January, when the Northwest's worst storm in years knocked out BCWA's electrical power for three days. "In the past a blackout of that enormity would have put us behind the eight ball," Rohlman says. But with the help of temporary employees and a streamlined process, Blue Cross overcame the backlog within the week.

The company's financial health has recovered from the dark days of 1988. Revenues have increased from $350 million to $650 million, while net income jumped 84% during that period. Despite having fewer people, the company is processing 12% more claims than in 1991, spread over a higher enrollment base.

Looking to the future, Bill Eastwood, vice president of Benefit Services, ticks off other initiatives: An automated telephone system, similar to a bank's 24-hour phone service, will for the first time provide voice data to members and providers. For example, doctors' offices seeking to confirm the status of a claim will be able to get the information over the phone quickly from an automated response line, regardless of the time or day of the week. They will also be able to verify a new patient's eligibility and coverage.

To accomplish these dramatic performance improvements, BCWA employees are working more in teams and are getting cross-trained to eradicate the traditional barriers of job specialization.

"We're giving teams more say in things like how they dress, determining work hours and flex time, and setting their own goals and objectives," Eastwood says. "Soon, we'll literally be tearing down the walls of cubicles, which separate people, to create closer co-location that fosters teamwork," he says.

Perhaps the most ambitious of the organizational changes is a newly created position of "sales underwriter," which combines two functions, sales and underwriting, that had been separate and often adversarial. Now members of the sales force can negotiate quotes with accounts on the spot, instead of waiting days or weeks for an underwriter to produce the figures. Along with the empowerment comes greater personal accountability of making sound underwriting decisions, rather than simply racking up another sale.

The radical changes haven't been painless. Due in large part to a flattening of the management structure, approximately 100 employees were laid off last year as a result of a reorganization. "It was painful, especially for a small company like ours, but it was necessary for the organization to survive," Woods says.

Overall, BCWA executives credit the reengineering effort with putting them more closely in touch with their markets and customers. "We used to be very internally focused," says Bob Nakahara, senior vice president and chief financial officer. "We did things to satisfy ourselves, because it was easier. Once you change that focus and ask, 'Why are we doing this?', you get innovative and probe for customer-focused answers." Nakahara adds, "All answers should lead to the customer. Once the outward focus becomes the dominant force, reengineering really starts to take off."

"The low-cost producer with the high-quality product is eventually going to win, to dominate the marketplace," concludes Nakahara.

“Reengineering is the vehicle we’re using to get us to that state of administrative efficiency and operational excellence.”

B

Appendix: Definition of Terms

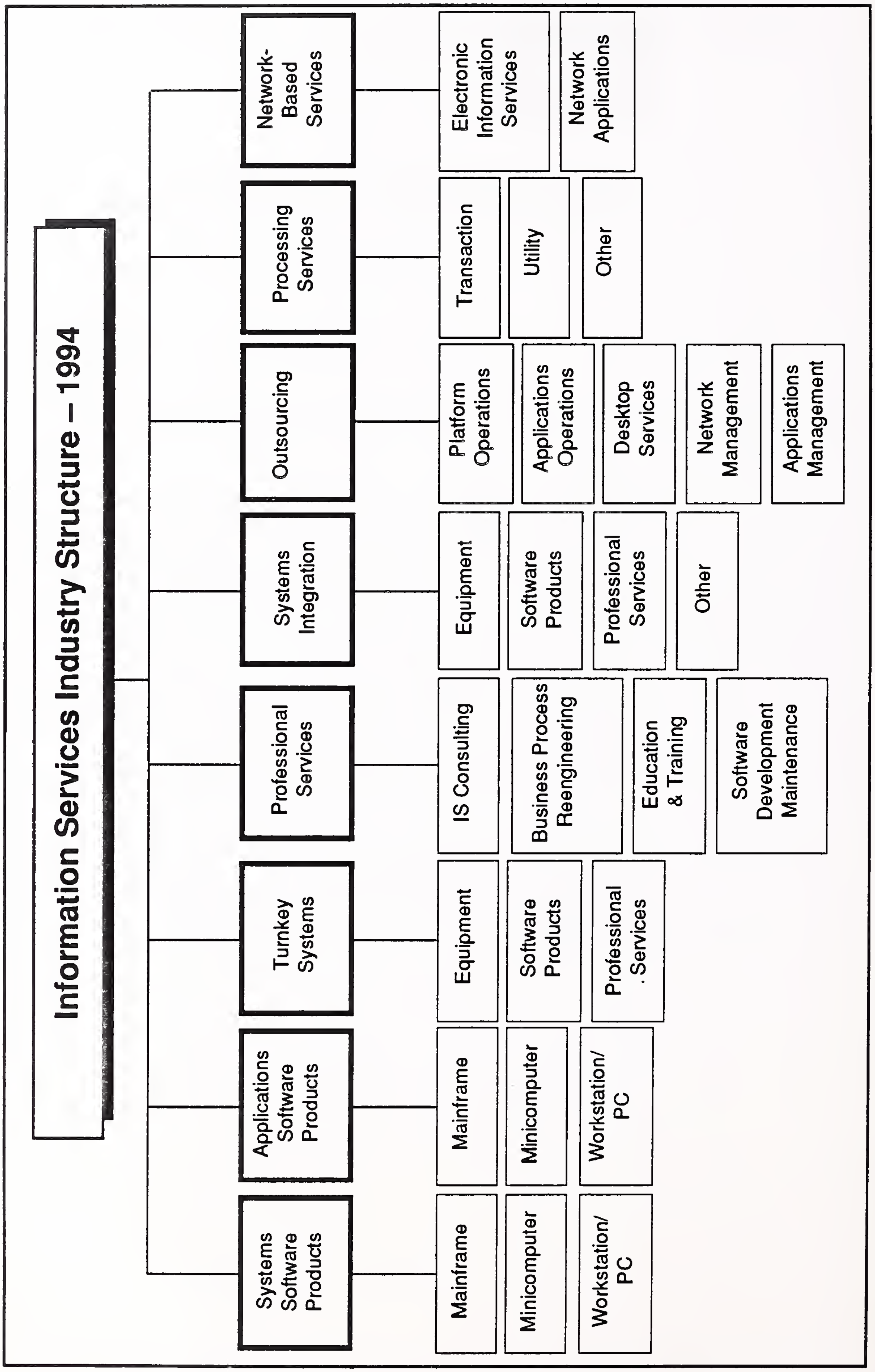
A

Introduction

INPUT's *Definition of Terms* provides the framework for all of INPUT's market analyses and forecasts of the information services industry. It is used for all U.S. programs. The structure defined in Exhibit B-1 is also used in Europe and for the worldwide forecast.

One of the strengths of INPUT's market analysis services is the consistency of the underlying market sizing and forecast data. Each year INPUT reviews its industry structure and makes changes if they are required. When changes are made they are carefully documented and the new definitions and forecasts reconciled to the prior definitions and forecasts. INPUT clients have the benefit of being able to track market forecast data from year to year against a proven and consistent foundation of definitions.

Exhibit B-1


Information Services Industry Structure – 1994
Systems Software Products
Mainframe
Minicomputer
Workstation/ PC
Applications Software Products
Mainframe
Minicomputer
Workstation/ PC
Turnkey Systems
Equipment
Software Products
Professional Services
Professional Services
IS Consulting
Business Process Reengineering
Education & Training
Software Development Maintenance
Systems Integration
Equipment
Software Products
Professional Services
Other
Outsourcing
Platform Operations
Applications Operations
Desktop Services
Network Management
Applications Management
Processing Services
Transaction
Utility
Other
Network-Based Services
Electronic Information Services
Network Applications

B

Overall Definitions and Analytical Framework

1. Systems Integration (SI)

Systems integration is a vendor service that provides a complete solution to an information system, networking or automation development requirement through the custom selection and implementation of a variety of information system products and services. A systems integrator is responsible for the overall management of a systems integration contract and is the single point of contact and responsibility to the buyer for the delivery of the specified system function, on schedule and at the contracted price. (Refer to Exhibit B-2.)

The components of a systems integration project are the following:

- *Equipment* - information processing and communications equipment required to build the systems solution. This component may include custom as well as off-the-shelf equipment to meet the unique needs of the project. The systems integration equipment category excludes turnkey systems by definition.

- *Software products* - prepackaged applications and systems software products.

- *Professional services* - the value-added component that adapts the equipment and develops, assembles, or modifies the software and hardware to meet the system's requirements. It includes all of the professional services activities required to develop, implement, and if included in the contract, operate an information system, including consulting, program/project management, design and integration, software development, education and training, documentation, and systems operations and maintenance.

Exhibit B-2

Products/Services in Systems Integration Projects

Equipment

- Information systems
- Communications

Software Products

- Systems software
- Applications software

Professional Services

- Consulting
  - Feasibility and trade-off studies
  - Selection of equipment, network and software
- Program/project management
- Design/integration
  - Systems design
  - Installation of equipment, network, and software
  - Demonstration and testing
- Software development
  - Modification of software packages
  - Modification of existing software
  - Custom development of software
- Education/training and documentation
- Systems operations/maintenance

Other Miscellaneous Products/Services

- Site preparation
- Data processing supplies
- Processing/network services
- Data/voice communication services

- *Other services* - most systems integration contracts include other services and product expenditures that are not classified elsewhere. This category includes miscellaneous items such as engineering services, automation equipment, computer supplies, business support services and supplies, and other items required for a smooth development effort.

2. Professional Services

This category includes four segments: consulting, education and training, software development, and business process reengineering. Exhibit B-3 provides additional detail.

- *Consulting:* Services include management consulting (related to information systems), information systems re-engineering, information systems consulting, feasibility analysis and cost-effectiveness studies, and project management assistance. Services may be related to any aspect of the information system, including equipment, software, networks and systems operations.

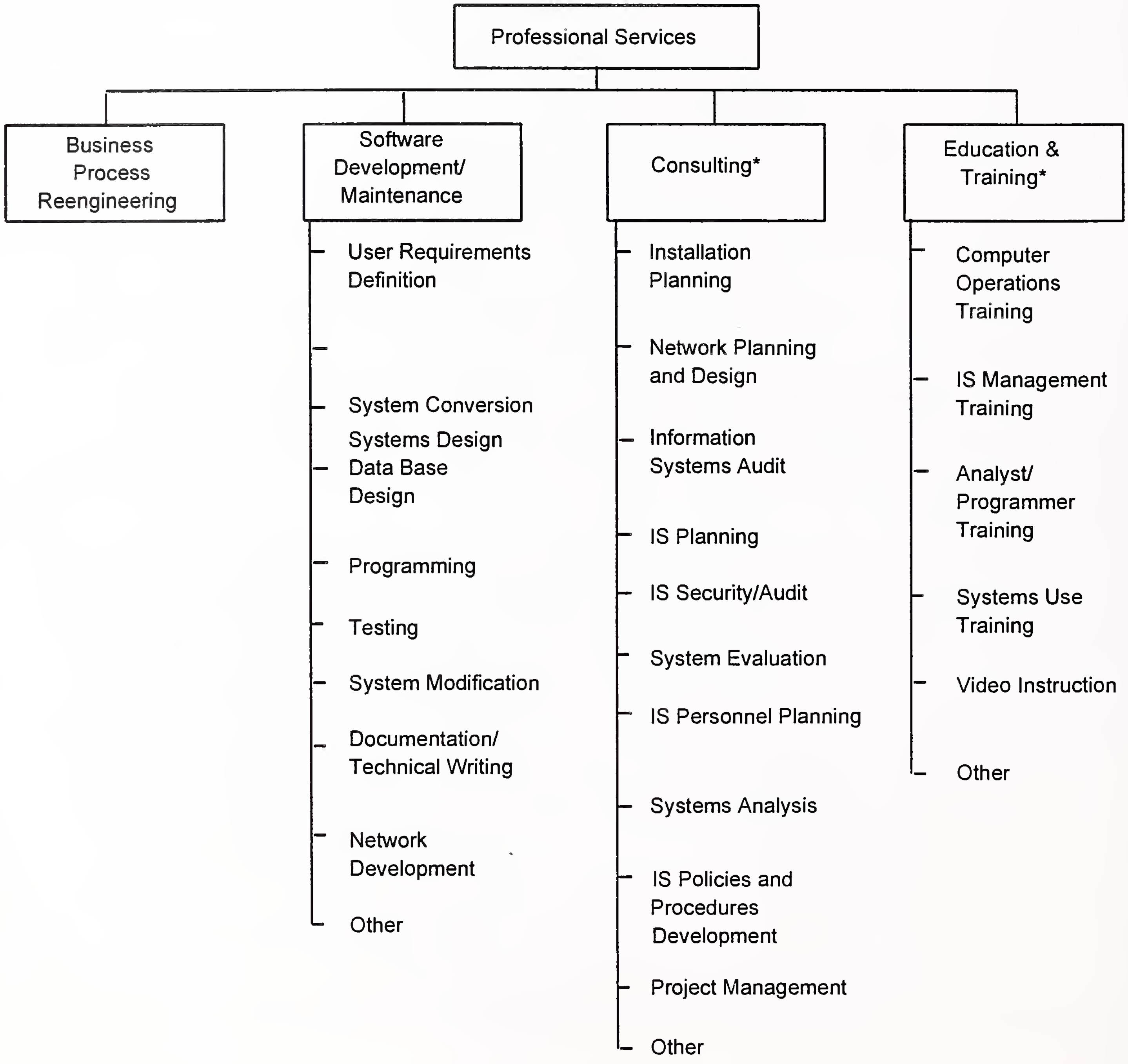
- *Education and Training:* Services that provide training and education or the development of training materials related to information systems and services for the information systems professional and the user, including computer-aided instruction, computer-based education, and vendor instruction of user personnel in operations, design, programming, and documentation. Education and training provided by school systems is not included. General education and training products are included as a cross-industry market sector.

- *Software Development:* Services include user requirements definition, systems design, contract programming, documentation, and implementation of software performed on a custom basis. Conversion and maintenance services are also included.

- *Business Process Reengineering:* This is a new segment within the INPUT definition of professional services. BPR is defined as the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance, such as cost, quality, service and speed.

Exhibit B-3

Professional Services Market Structure



*Related to computer systems, topics, or issues

C

Appendix: Vendor Questionnaire

Business Integration Program - Project BISI

INPUT is conducting a study on the relationship between Business Process Reengineering and Systems Integration. The information that you provide will be confidential and neither your name nor your company's name will be connected with any information in the study. In return for your assistance, we will provide you with a summary of our findings at no charge.

1. Business Process Reengineering is a name frequently used but companies have different definitions of what it is - how do you define BPR?

   ____

   ____

2. Which parts of BPR, Systems Integration (SI) and Professional Services (PS) does your company provide? Which companies, if any, do you partner with to provide some of these services? What is the competitive advantage from offering the full range of services?

   ____

   ____

3. Did any BPR projects lead to SI work or any SI projects lead to BPR work? If so, why did this occur?

   ____

   ____

4. What percentage of BPR projects led to SI? _____

   What percentage of SI projects led to BPR? _____

Skip to question 6 question if there was no BPR work resulting in SI

5. How many BPR projects have you worked on and what percentage of them led to SI projects? BPR: _____ SI: _____

6. Did you find a difference between the type of SI project coming out of the BPR work and the usual SI you are asked to perform? Example differences could include areas such as: scope, pricing, type of contract, client relationship etc.

   ____

7. *Skip this question if there was no BPR work resulting from SI*

   Did you find a difference between the type of BPR project coming out of the SI work and the usual BPR you are asked to perform? Example differences could include areas such as: scope, pricing, type of contract, client relationship etc.

   ____

8. Do your customers spend more, less or an equal amount with you on BPR compared with SI? __________

   Do you expect this ratio to change over the next 3 years and why?

   ____

   ____

9. What are the differences between the BPR and the SI purchase decision makers in the user organizations?

   ____

   ____

10. Explain any ways in which user interest in BPR affects your service business?

    ____

    ____

11. In which areas are the skills of your BPR and SI consultants having to change?

____

____

12. Who, would you say, your top 5 competitors in the BPR field?

1. ____________________________________
2. ____________________________________
3. ____________________________________
4. ____________________________________
5. ____________________________________

13. Who, would you say, are your top 5 SI competitors?

1. ____________________________________
2. ____________________________________
3. ____________________________________
4. ____________________________________
5. ____________________________________

14. As part of this research we would like to speak with users who have used BPR and SI services. Could you supply us with details of 5 clients who have used your services in this area ?

	Company	Contact	Telephone Number
1.			
2.			
3.			
4.			
5.			

15. Do you have any other comments you wish to make regarding the relationship between BPR on SI?

____

____

(Blank)

D

Appendix: User Questionnaire

Business Integration Program - Project BISI

INPUT is conducting a study on the relationship between Business Process Reengineering and Systems Integration. The information that you provide will be confidential and neither your name nor your company's name will be connected with any information in the study. In return for your assistance, we will provide you with a summary of our findings at no charge.

1. Business Process Reengineering is a name frequently used but companies have different definitions of what it is - how do you define BPR?

2. How has your company used BPR?

3. Did any of your BPR projects lead to SI projects or any SI work lead to BPR projects? Was this an expected outcome?

4. How did BPR impact any ongoing SI projects?

5. *Skip this question if there was no BPR work resulting in SI*

   Did you find a difference between the type of SI projects resulting from BPR work and your other SI projects?

   ____

   ____

6. *Skip this question if there was no SI work resulting in BPR*

   Did you find a difference between the type of BPR project resulting from SI work and other BPR projects you have undertaken?

   ____

   ____

7. Do you expect to use the same vendors for BPR and SI? _____

8. Are the same people responsible for selecting BPR as well as SI vendors?

   ____

   ____

9. Did you expect the work in one area to lead to work in the other? If so, how did you organize the contact(s)?

   ____

   ____

10. Do you spend more, less or an equal amount on BPR projects compared with SI?

    Do you expect this ratio to change over the next 3 years and why?

    ____

    ____

11. Is BPR resulting in increased demand for SI services within certain areas? Can you estimate/measure this increase?

    ____

    ____

12. Who do you see as the top 5 vendors in the BPR field?

    1. ____________________
    2. ____________________
    3. ____________________
    4. ____________________
    5. ____________________

13. What characteristics do you look for in a BPR vendor?

    ____

    ____

14. Who are the top 5 SI suppliers?

    1. ____________________
    2. ____________________
    3. ____________________
    4. ____________________
    5. ____________________

15. Do you have any other comments you wish to make regarding the relationship between BPR on SI?

    ____

    ____

16. Do you have an example, that we could briefly describe in the report, of a BPR project that was directly related to an SI project?

    ____

    ____

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